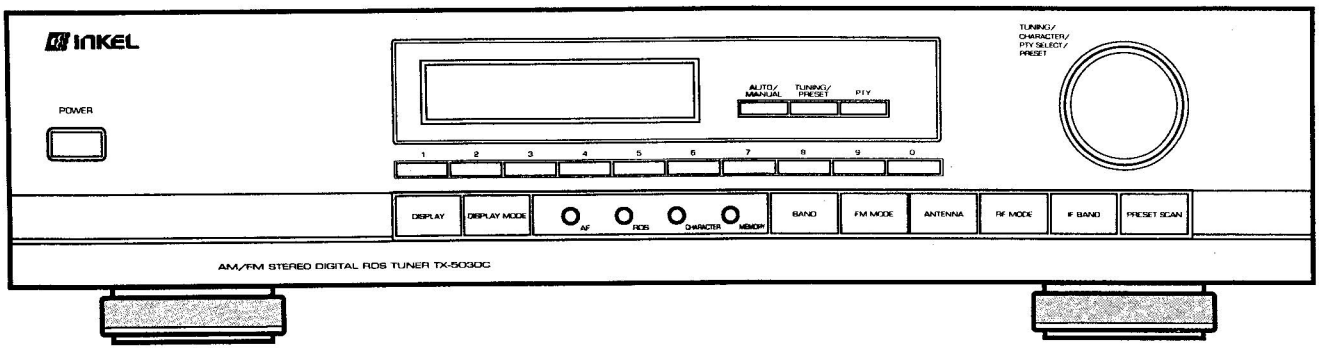
SERVICE MANUAL

TX-5030C

AM/FM
STEREO DIGITAL RDS TUNER



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Sherwood

SAFETY PRECAUTIONS

WARNING

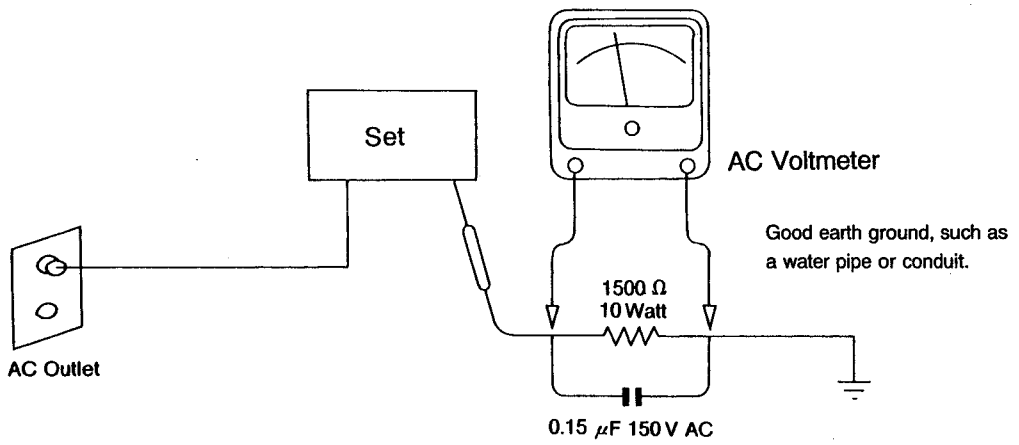
Before servicing this unit, familiarize yourself with the following precautions:

1. Many electrical and mechanical parts in this player have special safety characteristics that often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by ⚠ in the schematic diagram and the parts list.

   Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

2. Before returning the set to the customer, always do an AC leakage current check on the exposed metal parts of the cabinet, such as terminals, screw heads, and metal overlays, to be sure the set is safe to operate without danger of electrical shock.
   Plug the AC line cord directly into a 120 V AC outlet **(120 V AC version only).** (Do not use a line isolation transformer during this check.)
   Be sure your AC voltmeter has a sensitivity of 5000 Ω per volt or greater. Then connect a 1500 Ω 10 watt resistor, paralleled by a 0.15 μF 150 V AC capacitor, between a known good earth ground (water pipe, or conduit) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of a 1500 Ω resistor and a 0.15 μF capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.75 V RMS. This corresponds to 0.2 mA AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

At 5000 Ω per volt or greater sensitivity,
the reading should not exceed 0.75 V.



Place the probe on each exposed metallic part.

SPECIFICATIONS

FM Section		Unit	Limit	Nominal
Tuning range:				
	USA/Canada	MHz	87.50 — 107.90	
	Europe	MHz	87.50 — 108.00	
Step:				
	USA/Canada	kHz	200/200	
	Europe (Auto/Man.)	kHz	50/50	
Usable sensitivity:				
USA/Canada	Mono	uV	1.2	0.9
	Stereo	uV	31.6	28
Europe				
	Mono	uV	1.3	1
	Stereo	uV	35.8	31.6
Limiting sensitivity at -3 dB		uV	1.2	0.891
Auto search threshold		uV	±3	10
Image rejection at 90/106 MHz		dB	80/70	83/80
IF rejection		dB	90	100
AM rejection at 30% mod.		dB	50	60
Spurious suppression with (attenuator/out attenuator)		dB	80/70	110/100
Selectivity at ±300 kHz (wide/narrow)		dB	45/70	50/72
Audio response at ±3 dB		Hz — kHz	20 — 15	15 - 15.2
Channel separation:				
	1 kHz	dB	40	45
	10 kHz	dB	30	35
Distortion (wide/narrow):				
USA/Canada	Mono	%	0.3/0.6	0.1/0.3
	Stereo	%	0.5/1	0.3/0.6
Europe	Mono	%	0.4/0.8	0.2/0.5
	Stereo	%	0.7/1.5	0.5/1
Signal to noise ratio (WHD/UNWHD):				
	Mono	dB	70/66	75/70
	Stereo	dB	66/60	70/65
Output voltage:				
	USA/Canada	mV	±50	600
	Europe	mV	±50	500
RDS Threshold 40 kHz dev. 10% pilot (RDS 1.6% + RVF=5.6 kHz)		uV	30	25
Memories holding time		weeks	4	4

AM (MW/LW) Section		Unit	Limit	Nominal
Tuning range:				
LW		kHz	153 — 279	
MW (USA/Canada//Europe)		kHz	520—1710//522—1611	
Step:				
LW		kHz	1	
MW (USA/Canada//Europe)		kHz	9//10	
Usable sensitivity at SN=20 dB				
	LW: 207 kHz	uV/m	1200	1000
	MW: 1000 kHz	uV/m	800	500
Image rejection:				
	LW: 250 kHz	dB	35	40
	MW: 1400 kHz	dB	33	37
I.F. Rejection:				
	LW: 200 kHz	dB	50	〉50
	MW: 600 kHz	dB	40	〉40

AM (MW/LW) Section		Unit	Limit	Nominal
Selectivity:				
	LW: 200 kHz	dB	30	〉30
	MW: 1000 kHz	dB	25	〉25
A.G.C. ratio at 1000 kHz		dB	35	44
Audio response at -6 dB				
	LW: 200 kHz	Hz — kHz	50 — 2	40 — 2.5
	MW: 1000 kHz	Hz — kHz	50 — 2	40 — 2.3
Distortion at 30% mod.	MW	%	1.5	0.7
Signal to noise ratio (UNWHD):				
	LW	dB	36	38
	MW	dB	40	45
Output voltage at 80% mod.:				
	USA/Canada	mV	±50	600
	Europe	mV	±50	500

General

Power consumption.....10 W

Dimensions (HWD).....3.6×17.3×9.6 inches (92×440×245 mm)

Weight (Net).....3.6 kg (8 lbs)

Power Requirements:

A: 120 V 60 Hz for American/Canadian version
B: 120/220 V, 60/50 Hz for mult-voltage version (switchable)
D: 230 V 50 Hz for German and General European version
E: 240 V 50 Hz for U.K/Austalian version
G: 230 V 50 Hz for Other area

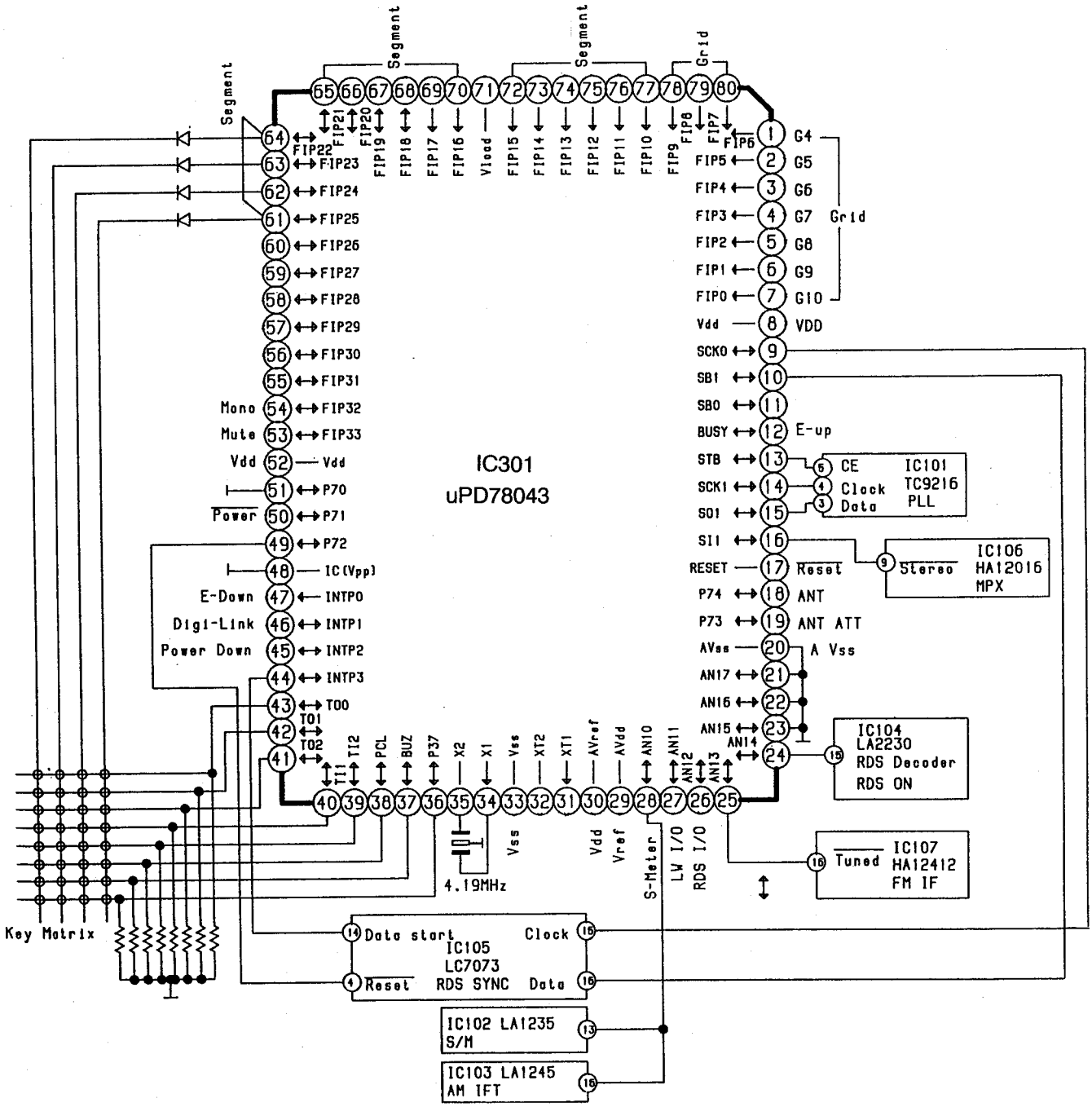
Note :

1. Nominal specs represent the design specs. All units should be able to approximate these some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition that still might be considered acceptable: in no case should a unit fail to meet limit specs.
2. This manual is based on the General European (D) standard, and provides information on regional circuit modification through the use of alternate schematic diagrams or wiring diagrams, and information on regional component variations through the use of parts lists. Design and specifications subject to change without notice.

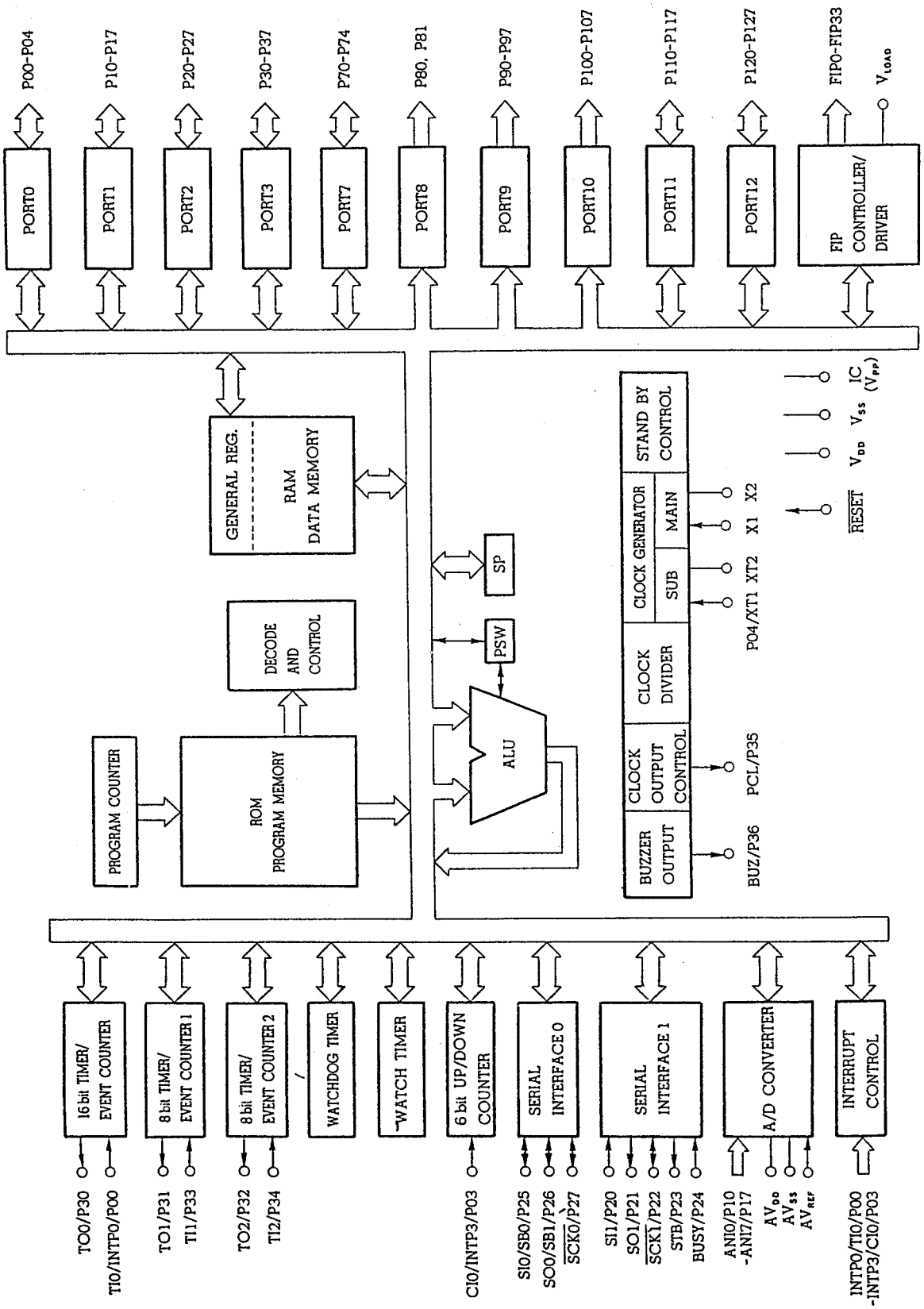
CIRCUIT DESCRIPTION

1. Pin Connection

IC301: μPD 78043



2. Block Diagram



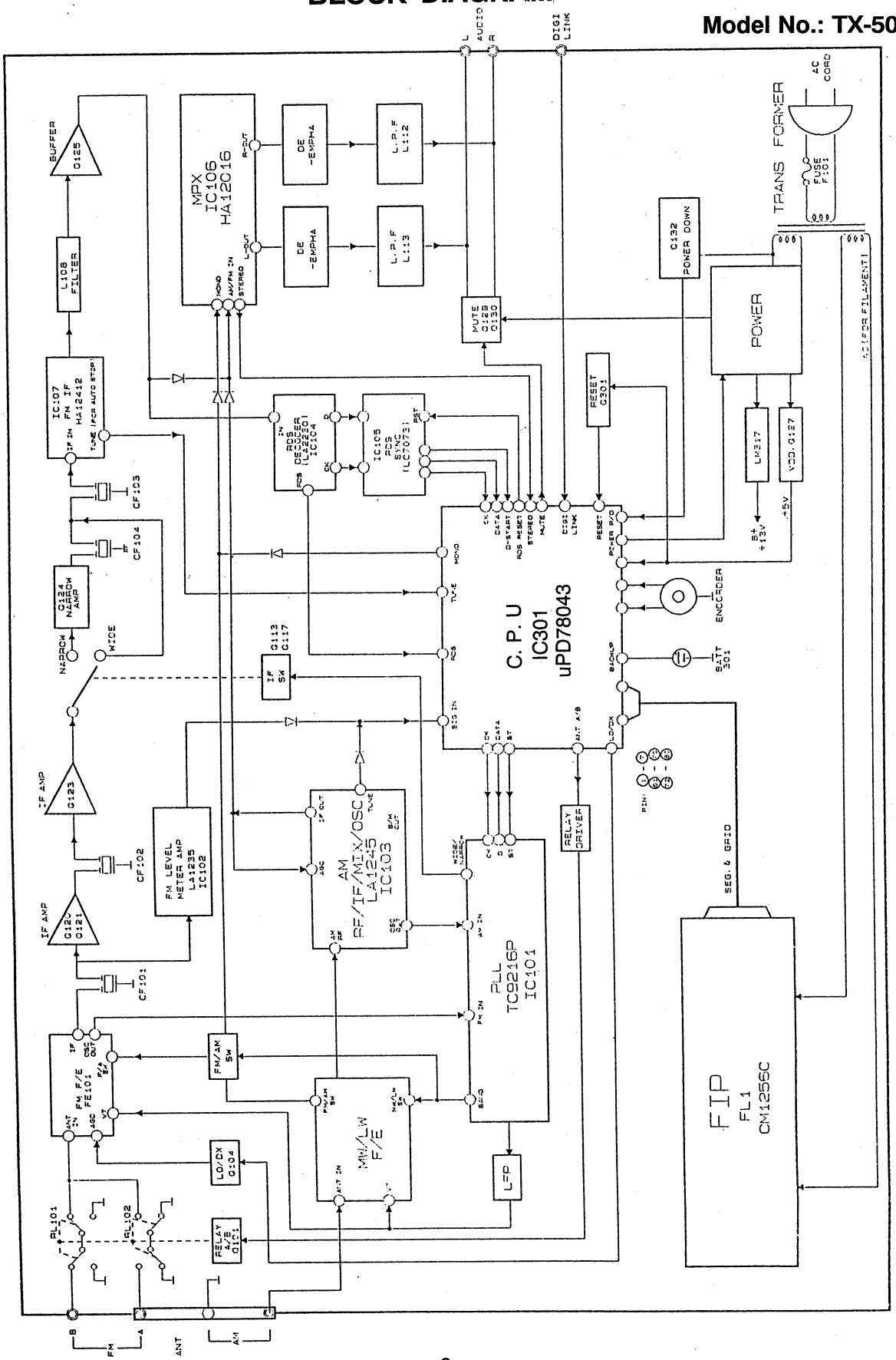
3. Pin Function

Pin No.	In/out	Description
1-7	Out	Grid 4-10
8		Vdd
9	In/Out	LC7073, clock
10	In/Out	LC7073, data
11	In/Out	NC
12	In/Out	Encoder up toggle at CW
13	In/Out	TC9216, chip enable
14	In/Out	TC9216, clock
15	In/Out	TC9216, data
16	In/Out	Stereo input
17		Reset
18	In/Out	Antenna A, B select port Low: antenna A High: antenna B
19	In/Out	Antenna attenuator Low: distance (local flag off) High: local (local flag on)
20, 21	In/Out	AVss
22, 23	In/Out	AVss
24	In/Out	RDS on Input
25	In/Out	Indicator "TUNED"
26	In/Out	RDS Low: RDS Out High: RDS In
27	In/Out	LW Low: LW Out High: LW In
28	In/Out	S-Meter: MW, LW//FM signal level input
29, 30		Vdd
31	In	Vss
32		NC
33		Vss
34	In	X1: 4.19 MHz resonator

Pin No.	In/out	Description
35		X2: 4.19 MHz resonator
36-43	In/Out	Key scan input
44	In/Out	LC7073, data start
45	In/Out	Power down Main power on/off (high/low) sense
46	In/Out	Digilink
47	In	Encoder down toggle at CCW
48		Vss
49	In/Out	RDS on High: MW/LW or FM to RDS key off Low: FM on RDS to RDS key on (RDS flag on)
50	In/Out	Power Low: power key on High: power key off
51	In/Out	NC
52		Vdd
53	In/Out	Mute Low: mute off High: mute on
54	In/Out	Mono High: mono key on; mono flag on Low: mono key off; mono flag off
55-60	In/Out	NC
61-64	In/Out	Segment, S16-S13 & key scan out
65-70	In/Out	Segment, S12-S7
71		V_{load}
72-77	Out	Segment, S6-S1
78-80	Out	Grid G1-G3

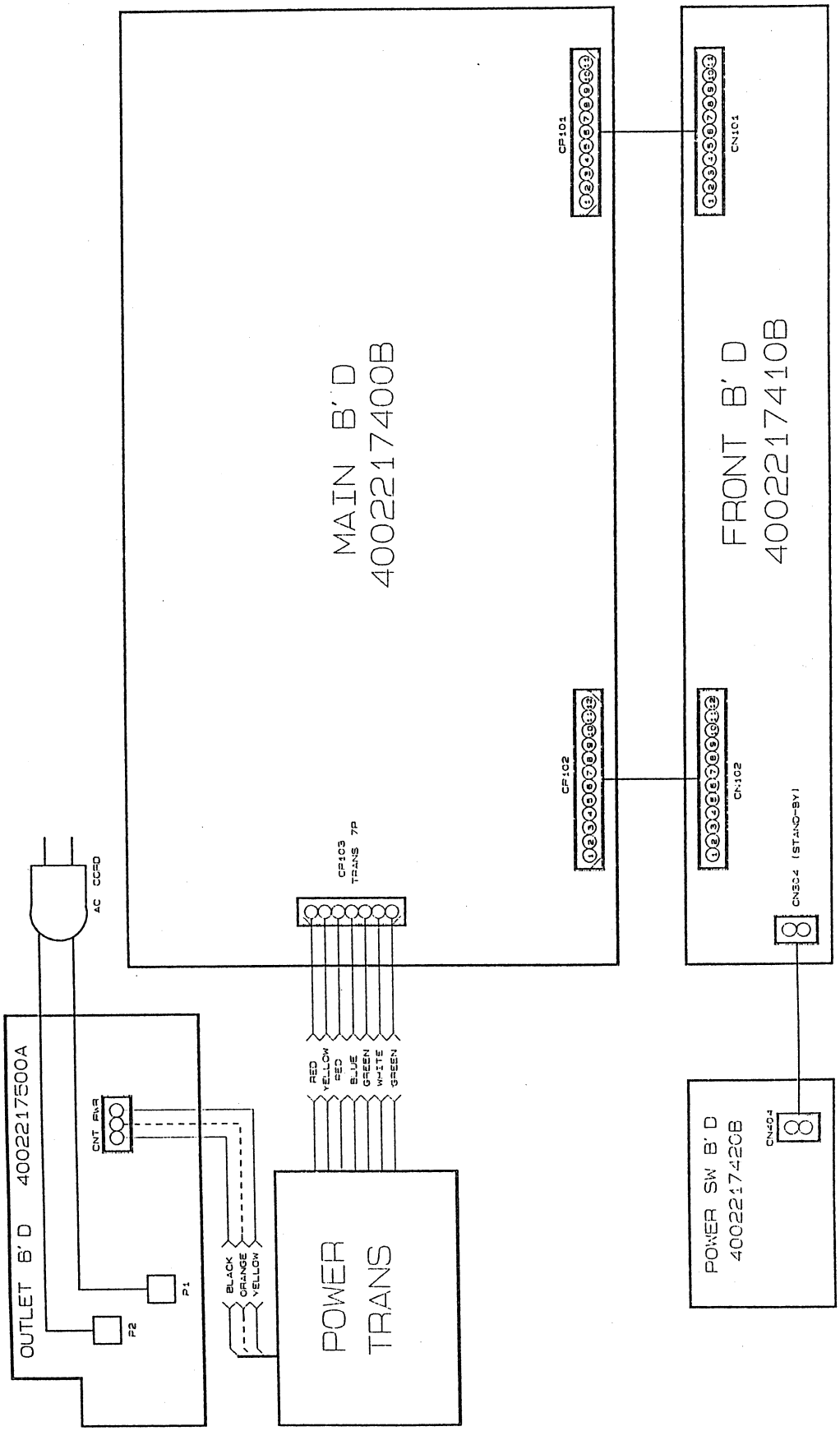
BLOCK DIAGRAM

Model No.: TX-5030C



WIRING DIAGRAM

Model No.: TX-5030C



ADJUSTMENTS

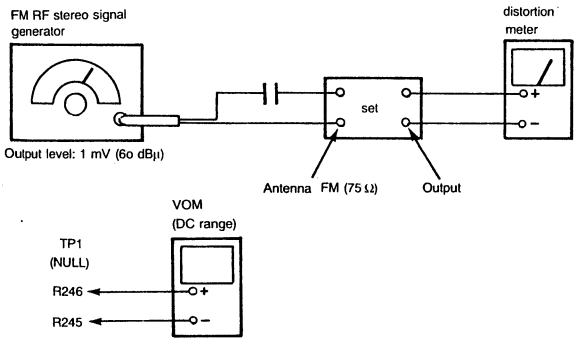
• Refer to Adjustment Location on page 13
Note: As a front-end (FE101) is difficult to repair if faulty, replace it with new one.

FM SECTION

• Standard Setting of FM Stereo RF Signal Generator.

STEREO STANDARD SIGNAL	MONAURAL STANDARD SIGNAL
Carrier frequency 98 MHz. Modulation: Audio 1 kHz, 40 kHz deviation. Pilot 19 kHz, 7.5 kHz deviation.	98 MHz. 1 kHz, 40 kHz deviation.

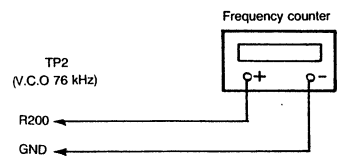
FM Discriminator Adjustment
(NULL and MONO Distortion)



Procedure:
1. Tune the set to 98 MHz.
2. Adjust TP1 for 0 V reading on the VOM.··· NULL
3. Adjust L107 for a minimum reading on the distortion meter.·····MONO Distortion
4. Repeat the adjustments of 2 and 3 several times.

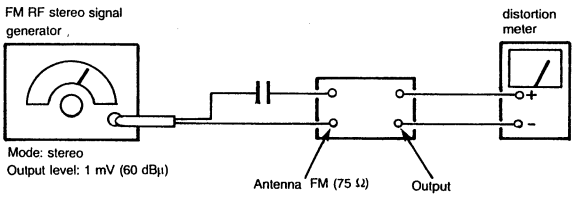
Note: When replacing the ceramic filter, perform this alignment.

FM V.C.O (76 kHz) Adjustment



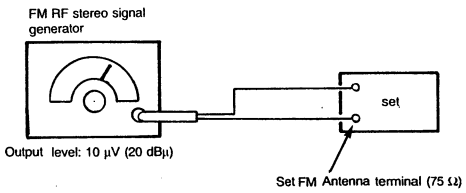
1. Tune the set to 98 MHz.
2. Adjust TP2 for 76 kHz on the frequency counter.
(※76 kHz ±0.05 kHz)

FM Stereo Distortion Adjustment



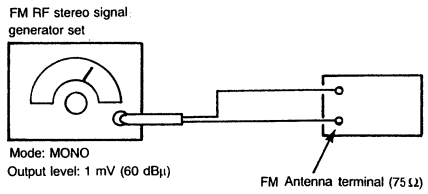
Procedure:
1. Tune the set to 98 MHz.
Set SSG. output level to 1 mV (60 dBμ)
2. Adjust IFT in FE101 for a minimum reading on the distortion meter.

FM Tuned Indication Lighting Level Adjustment



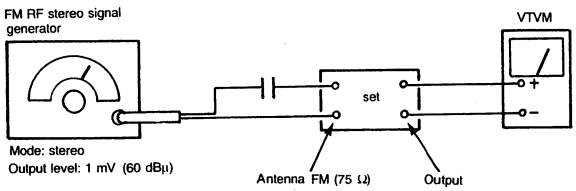
Procedure:
1. Tune the set to 98 MHz.
Set SSG output level to 20 dBμ.
2. Adjust R209 to the place where "TUNED" indicator lights.

FM Signal Level Adjustment ("D" version only)



Procedure:
1. Tune the set to 98 MHz.
2. Push the display button to change the display mode for signal strength indication.
3. Adjust R144 to the place where level in the signal strength "60 dB" indicator lights on fluorescent tube.

FM Stereo Separation Adjustment

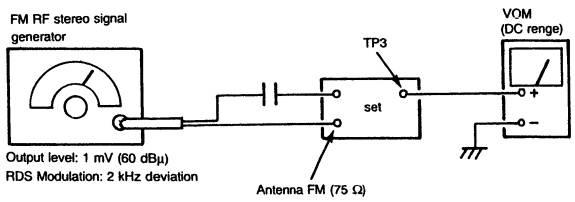


Procedure:

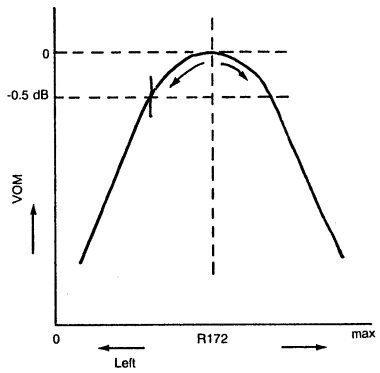
FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH.	L-CH.	Ⓐ
R-CH.	L-CH.	Ⓑ Adjust R220 minimum reading.
R-CH.	R-CH.	Ⓒ
L-CH.	R-CH.	Ⓓ Adjust R220 for minimum reading.

L-CH. Stereo separation: Ⓐ — Ⓑ
R-CH. Stereo separation: Ⓒ — Ⓓ
※IF BAND Switch
WIDE: Adjust R220
NARROW: Adjust R224
The separation of both channels should be equal.

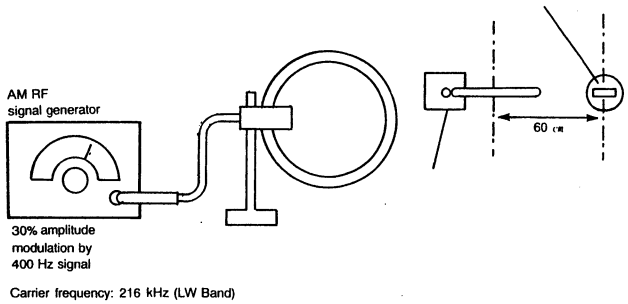
RDS, BPF Adjustment ("D" Version only)

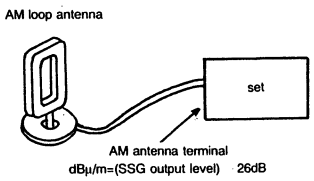


Procedure:
1. Tune R172 to counter clockwise (left) or clockwise (right) and set the level below 0.5 dB than maximum reading on the VOM. (refer to below drawing.)



AM SECTION

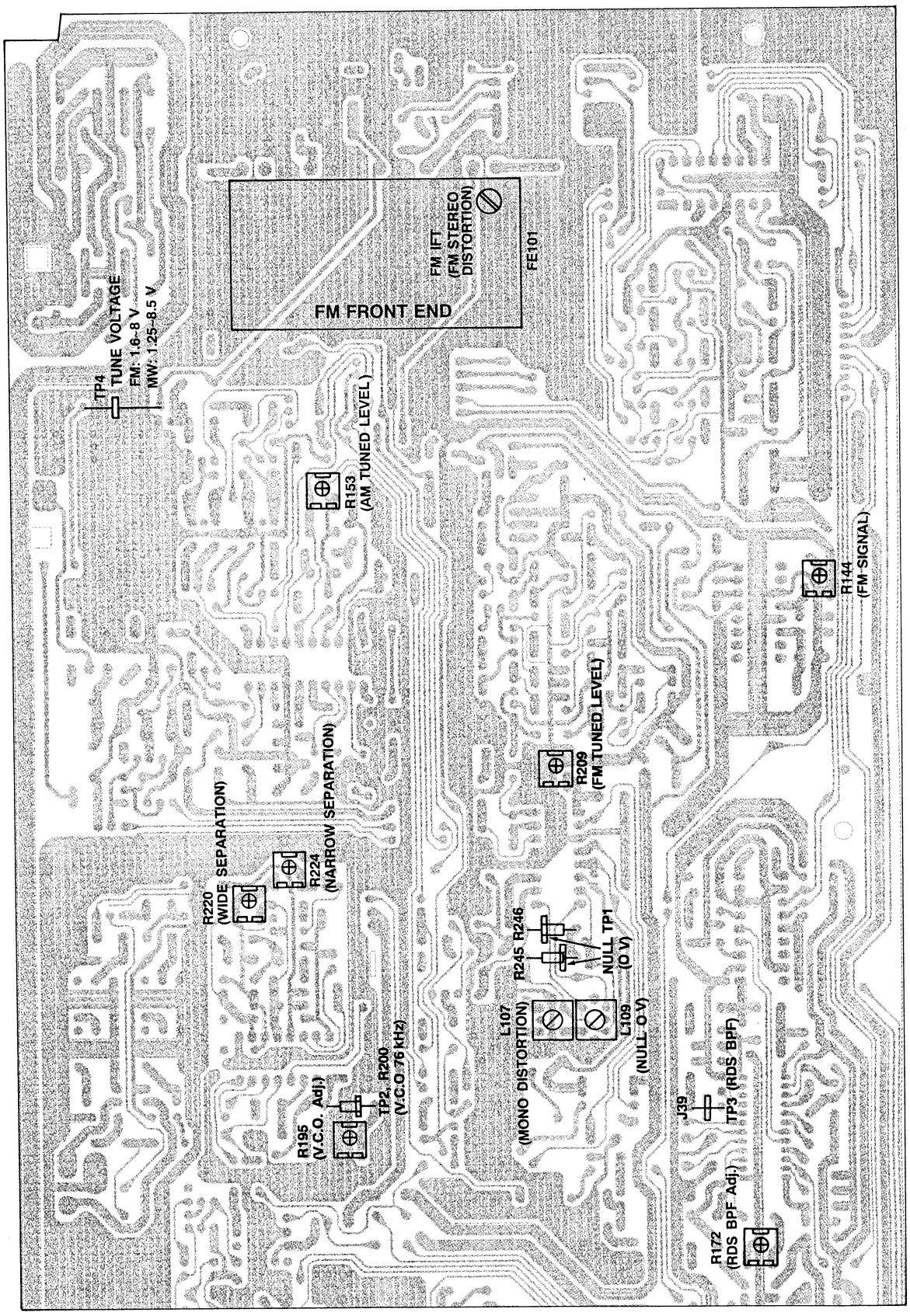




AM TUNED Level Adjustment

Procedure:
1. Set SSG output level so that antenna input level of the set becomes 700 μV (57 dBμ/m).
2. Adjust R153 to the place where "TUNED" indicator turns from dark to light.

Alignment and Test points (Tuner Main P.C.Board)



MECHANICAL PARTS LIST

CABINET & CHASSIS

Ref. No.	Part No.	Description	Q'ty	Version
PACKEGE				
	9715000110	Film Soft PE	1	
	9722017710	Cushion Poly	1	
	049604123164	Box Carton	1	
ACCESSORY				
	4328200510	Cord RCA 2P	1	
	4328204510	Cord RCA 1P	1	
	4348001110	Antenna Cord	1	
CABINET				
1	048602019011	Panel Front	1	D
	048602019012	Panel Front	1	KS
2	8521008510	Body Front	1	D
	8521008550	Body Front	1	KS
3	048535033911	Badge, Sherwood	1	D
	048535034011	Badge, Inkel	1	KS
4	048553018311	Window Display	1	D
	048553020011	Window Display	1	KS
5	048643006511	Knob Rotary	1	D
	048643006512	Knob Rotary	1	KS
6	048543056011	Button Tact 8 Key	1	D
	048543060711	Button Tact 8 Key	1	KS
7	048525007411	Bezel, Gold	2	D
	048525007411	Bezel, Gold	1	KS
8	8543027510	Button Tact, 4 Key	1	D
	8543027560	Button Tact, 2 Key	1	KS
9	4658003710	Switch Tact	26	D
	4658003710	Switch Tact	23	KS
10	3208062810	Encorder Volume	1	
11	6121605520	Chassis Main	1	
12	046033102511	Foot, Hot Stamping	2	D
	046033102611	Foot, Gold	2	KS
13	046033102511	Foot, Hot Stamping	2	D
	6033102510	Foot, Black	2	KS
14	6705004220	Spacer	4	
15	7505206220	Heat Sink Regulater TR	1	
16	4438301110	Jack Connector	1	
	4355032110	F-Connector	1	
17	4408108210	Antenna Terminal	1	D
	4408101510	Antenna Terminal	1	KS
18	4438111310	Jack RCA 2P	1	
19	4438105020	Jack RCA 2P, Digi Link	1	
20	046122019521	Cover Top	1	D
	046122019522	Cover Top	1	KS
21	046102039151	Chassis Back	1	D
	046102039111	Chassis Back	1	KS
22	6518002320	Stopper Cord	1	
23	⚠ 4308000430	Cord AC Power	1	D
	⚠ 4308007310	Cord AC Power	1	KS
24	⚠ 2828009581	Power Transformer, 230 V 50 Hz	1	C,D,F
	⚠ 2828009907	Power Transformer, 220 V 60 Hz		KS
25	6528002810	Locking Tie	1	
26	⚠ 4448103610	AC Outlet	1	D
	⚠ 4448105510	AC Outlet	1	KS
27	4618006610	Switch Slide	1	B
28	2328000304	FL Display	1	
P1	4002217400	P.C.Board Main	1	
P1-1	4002217410	P.C.Board Front	1	
P1-2	4002217420	P.C.Board Power Switch	1	
P2	4002217500	P.C.Board Tuner Outlet	1	
S1	8109230083	Screw #2BTC 3x8B	22	
S2	8129230083	Screw #2FTC 3x8B	3	
S3	8159230081	Screw 2WPTC 3x8Y	10	
S4	8159440083	Screw WSAM 4x8B	6	
S5	8159230161	Screw #2WPTC 3x16Y	4	
S6	8155000710	Screw Ground	2	

Power Requirements:

A: 120 V 60 Hz for American/Canadian version
B: 120/220 V, 60/50 Hz for mult-voltage version (switchable)
D: 230 V 50 Hz for German and General European version
E: 240 V 50 Hz for U.K/Austalian version
G: 230 V 50 Hz for Other area

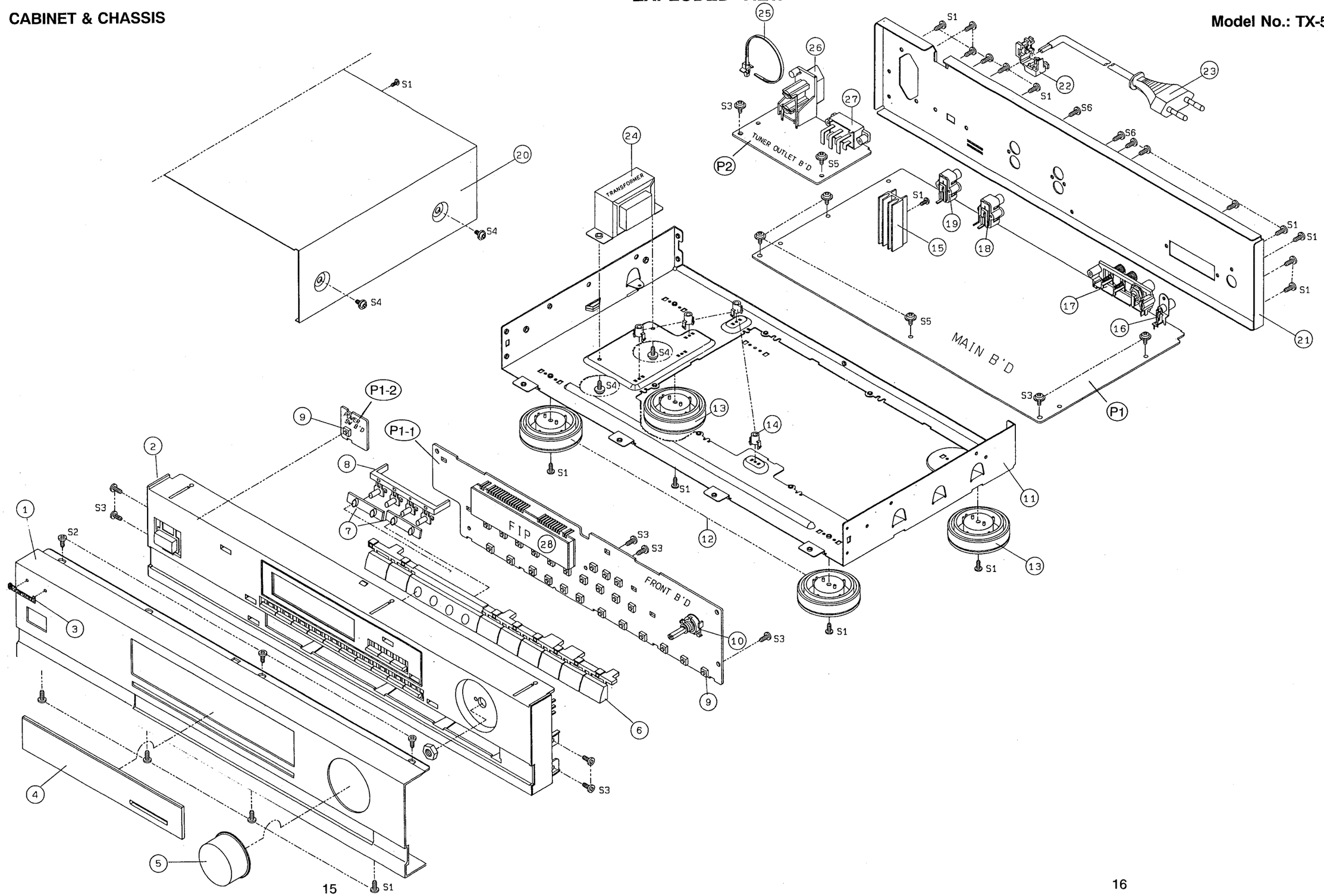
PRODUCT SAFETY NOTICE

Each precaution in this manual should be follower during servicing. Components identified with the IEC symbol ⚠ in the parts list and the safety can be of special significance. When replacing a component identified with ⚠ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

CABINET & CHASSIS

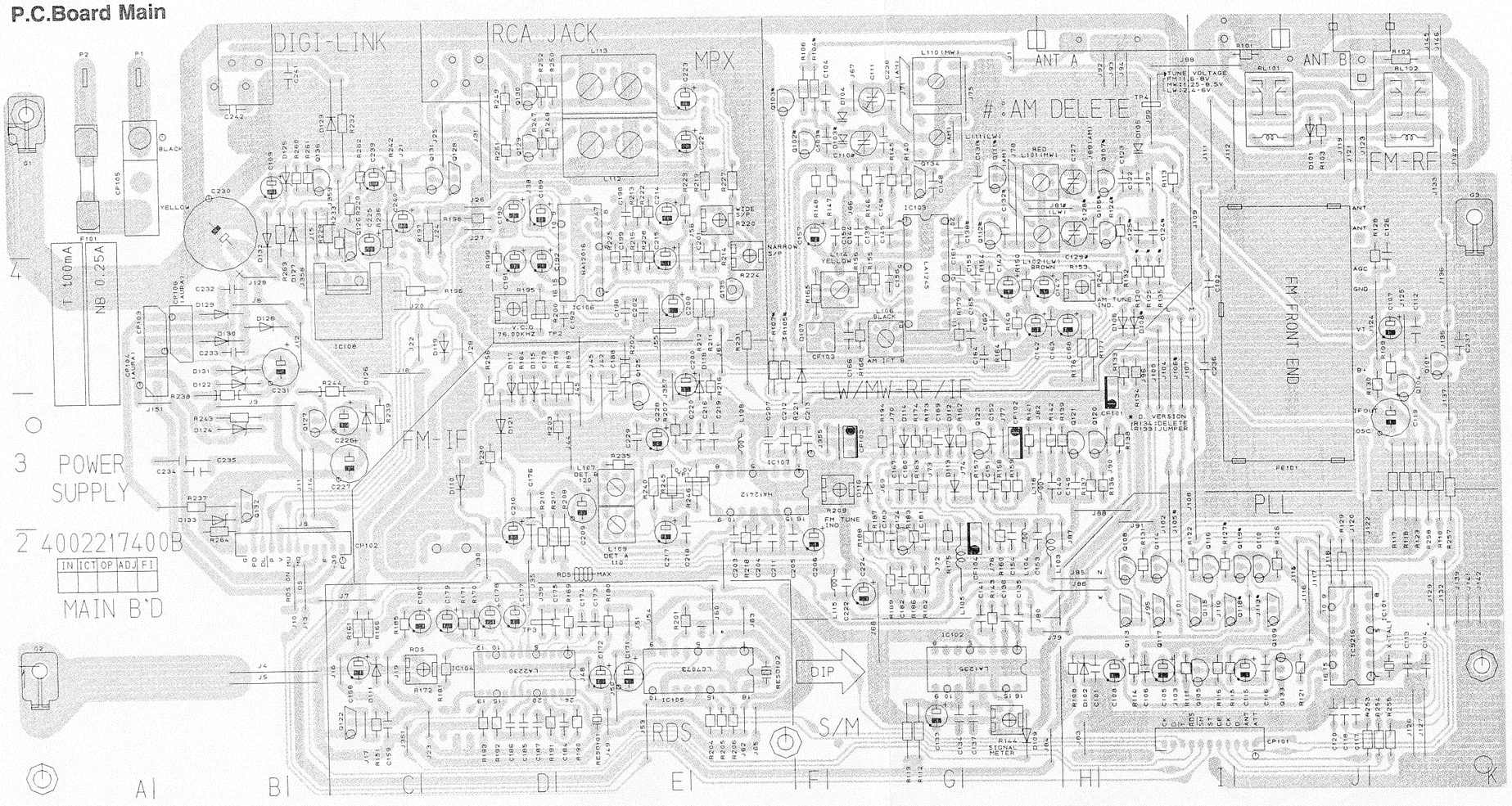
EXPLODED VIEW

Model No.: TX-5030C

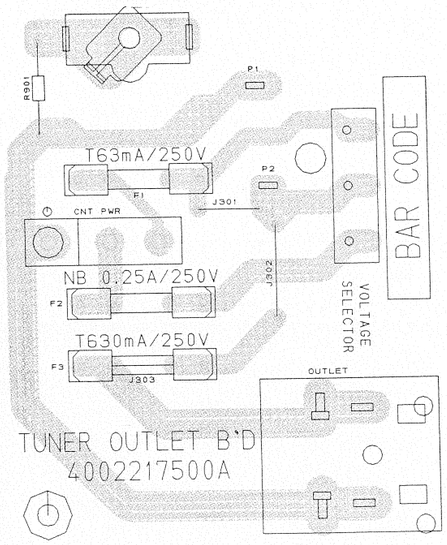


PRINTED CIRCUIT BOARDS

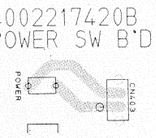
P.C.Board Main



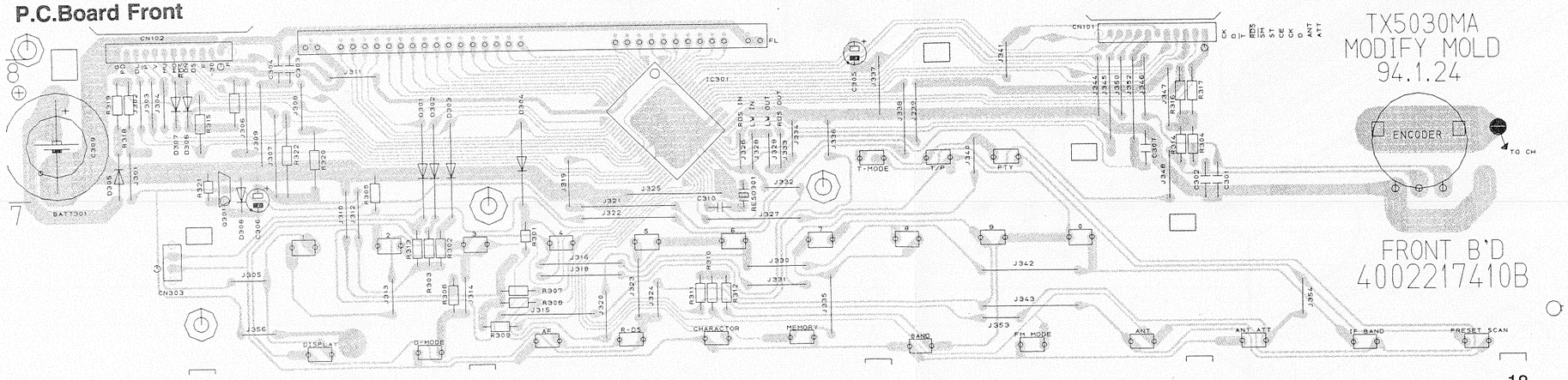
P.C.Board Tuner Outlet



P.C.Board Power SW



P.C.Board Front



ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTICE: Products marked with ⚠ have special characteristics important to safety.
If you replace any of these components, read carefully the product safety notice in this manual.
Don't degrade the safety of the product through improper servicing.
Resistor/Capacitor Tolerance, D: (±0.5%), J: (±5%), K: (±10%), M: (±20%), Z: (+80, -20%)

Ref. No.	Part No.	Description	Q'ty	Version
P1	**054031010001**	**Ass'y P.C.B Main**		
15	7505206220	Heat Sink Regulator TR	1	
16	4438301110	Jack Connector	1	
	4355032110	F-Connector	1	
17	4408108210	Antenna Terminal	1	D
	4408101510	Antenna Terminal	1	KS
18	4438111310	Jack RCA 2P	1	
19	4438105020	Jack RCA 2P, Digi Link	1	
C101	3519223935	Ceramic Tubular 0.022 uF 50 V Z	1	
C102	3519103935	Ceramic Tubular 0.01 uF 50 V Z	1	
C103	3519103935	Ceramic Tubular 0.01 uF 50 V Z	1	D
C104	3519473935	Ceramic Tubular 0.047 uF 50 V Z	1	
C105	3479222041	Electrolytic SA 22 uF 25 V M	1	
C106	3519223935	Ceramic Tubular 0.022 uF 50 V Z	1	
C107	3479222871	Electrolytic SA 0.22 uF 50 V M	1	
C108	3479347041	Electrolytic SG 47 uF 25 V M	1	
C109	3479210071	Electrolytic SA 10 uF 50 V M	1	
C110	3838001010	Trimmer, TZ03-R200FR	1	D
C111	3838001010	Trimmer, TZ03-R200FR	1	
C112	3519223935	Ceramic Tubular 0.022 uF 50 V Z	1	
C113/C114	3529330210	Ceramic Disc(CH) 33 pF 50 V J	2	
C115	3479210971	Electrolytic SA 1 uF 50 V M	1	
C116	3519104935	Ceramic Tubular 0.1 uF 50 V Z	1	
C117/C118	3519101935	Ceramic Tubular 100 pF 50 V J	2	
C119	3479310141	Electrolytic SG 100 uF 25 V M	1	
C120	3519101935	Ceramic Tubular 100 pF 50 V J	1	
C122	3519471935	Ceramic Tubular 470 pF 50 V J	1	
C123	3529180210	Ceramic Disc(CH) 18 pF 50 V J	1	
C124	3619181110	Poly 180 pF 50 V J	1	D
C125	3529100210	Ceramic Disc(CH) 10 pF 50 V J	1	D
C126	3519223935	Ceramic Tubular 0.022 uF 50 V Z	1	
C127	3838001000	Trimmer, TZ03-T110FR	1	
C128	3519270935	Ceramic Tubular 27 pF 50 V J	1	D
C129	3838001010	Trimmer, TZ03-R200FR	1	D
C131	3519473935	Ceramic Tubular 0.047 uF 50 V Z	1	
C132	3519473935	Ceramic Tubular 0.047 uF 50 V Z	1	D
C133	3479347041	Electrolytic SG 47 uF 25 V M	1	D
C134	3519223935	Ceramic Tubular 0.022 uF 50 V Z	1	D
C135	3519101935	Ceramic Tubular 100 pF 50 V J	1	
C136	3519223935	Ceramic Tubular 0.022 uF 50 V Z	1	
C137-C140	3519223935	Ceramic Tubular 0.022 uF 50 V Z	4	
C141	3519223935	Ceramic Tubular 0.022 uF 50 V Z	1	
C142	3479247971	Electrolytic SA 4.7 uF 50 V M	1	D
C143	3479247971	Electrolytic SA 4.7 uF 50 V M	1	
C144-C146	3519223935	Ceramic Tubular 0.022 uF 50 V Z	3	
C147	3479233971	Electrolytic SA 3.3 uF 50 V M	1	
C148	3519271935	Ceramic Tubular 220 pF 50 V J	1	
C149-C156	3519223935	Ceramic Tubular 0.022 uF 50 V Z	8	
C157	3479347041	Electrolytic SG 47 uF 25 V M	1	
C158	3479347041	Electrolytic SG 47 uF 25 V M	1	
C159	3519223935	Ceramic Tubular 0.022 uF 50 V Z	1	
C160-C161	3519223935	Ceramic Tubular 0.022 uF 50 V Z	2	
C162	3519103935	Ceramic Tubular 0.01 uF 50 V Z	1	
C163	3519223935	Ceramic Tubular 0.022 uF 50 V Z	1	
C164	3679333120	Mylar 0.033 uF 100 V J	1	
C165	3519102935	Ceramic Tubular 0.001 uF 50 V J	1	
C166/C167	3519223935	Ceramic Tubular 0.022 uF 50 V Z	2	

Ref. No.	Part No.	Description	Q'ty	Version
C168	3479347041	Electrolytic SG 47 uF 25 V M	1	
C169	3519223935	Ceramic Tubular 0.022 uF 50 V Z	1	
C170	3679563120	Mylar 0.056 uF 100 V J	1	
C171	3479347041	Electrolytic SG 47 uF 25 V M	1	D
C172	3479222041	Electrolytic SA 22 uF 25 V M	1	D
C173/C174	3679332120	Mylar 0.0033 uF 100 V J	2	D
C175/C176	3519103935	Ceramic Tubular 0.01 uF 50 V Z	2	D
C177	3479210071	Electrolytic SA 10 uF 50 V M	1	D
C178	3479247971	Electrolytic SA 4.7 uF 50 V M	1	D
C179	3479210071	Electrolytic SA 10 uF 50 V M	1	D
C180	3479247971	Electrolytic SA 4.7 uF 50 V M	1	D
C181-C183	3519223935	Ceramic Tubular 0.022 uF 50 V Z	3	
C184	3679682120	Mylar 0.0068 uF 100 V J	1	D
C185	3679332120	Mylar 0.0033 uF 100 V J	1	D
C186	3679223120	Mylar 0.022 uF 100 V J	1	D
C187	3579332530	Ceramic Disc 0.0033 uF 50 V Z	1	
C188	3519223935	Ceramic Tubular 0.022 uF 50 V Z	1	
C189	3479233971	Electrolytic SA 3.3 uF 50 V M	1	
C190	3479210971	Electrolytic SA 1 uF 50 V M	1	
C191	3479233971	Electrolytic SA 3.3 uF 50 V M	1	
C192	3479210971	Electrolytic SA 1 uF 50 V M	1	
C193	3619102110	Poly 0.001 uF 50 V J	1	
C196	3679473120	Mylar 0.047 uF 100 V J	1	
C198/C199	3679102120	Mylar 0.001 uF 100 V J	2	D
(C198/C199)	3679152120	Mylar 0.0015 uF 100 V J	2	KS
CF101-CF103	3908011940	Filter, SFE10.7MM-A	3	D
(CF101-103)	3908011021	Filter,SFE10.7MLK	3	KS
CF104	3908011131	Filter, SFE10.7MJ	1	D
(CF104)	3908011940	Filter, SFE10.7MM-A	1	KS
CF105	3938001049	Filter, SFP455H	1	
CP101	4428517010	Wafer, 11P	1	
CP102	4428517110	Wafer, 12P	1	
CP103	4428505410	Wafer, 7P	1	
CP105	4428525790	Wafer, AC 3P	1	
D101	2058322101	Diode, 1N4148 Switching	1	
D102	2258599103	Zener, UZ 5.1BSB	1	
D103-D105	2058819105	Diode Varacter,KV1235ZD	1	D
(D104-D105)	2058819106	Diode Varactor,KV1236ZD	1	KS
D106-D107	2058322101	Diode, 1N4148 Switching	2	
D108-D109	2058322101	Diode, 1N4148 Switching	2	D
D110	2058322101	Diode, 1N4148 Switching	1	
D111	2258599104	Zener, UZ 5.6BSB	1	D
D112-D121	2058322101	Diode, 1N4148 Switching	10	
D122	2258599115	Zener, UZ 27.0BSC	1	
D123	2058322101	Diode, 1N4148 Switching	1	
D124	2258599105	Zener, UZ 6.2BSB	1	
D125	2258599116	Zener, UZ 12.0BSC	1	
D126	2258599105	Zener, UZ 6.2BSB	1	
D127-D132	2258100135	⚠1N4002, Rectifier	6	
D133	2058322101	Diode, 1N4148 Switching	1	
FE101	3928801890	FM Tuner, FE407-G60	1	D
IC101	2168007205	TC9216P	1	
IC102	2168017146	LA1235	1	D
IC103	2168417100	LA1245	1	
IC104	2138317004	LA2230	1	D
IC105	2168017145	LC7073	1	D
IC106	2168411105	HA12016	1	

Ref. No.	Part No.	Description	Q'ty	Version
IC107	2168411106	HA12412	1	
IC108	2168600112	LM317T, REG. ADJ.	1	
L101	2638201150	Coil, AM OSC	1	
L102	2638401060	Coil, LW-OSC	1	D
L103-L105	2648656083	Coil Inductor, 56 uH	3	
L106	2848001110	Coil, AM IFT	1	
L107	2838501210	Coil, FM Quad DET B	1	
L108	2648601430	Coil Inductor 20.8mH	1	D
(L108)		Jumper	1	KS
L109	2838501110	Coil, FM Quad DET A	1	
L110	2608201130	Coil, LW-ANT	1	
L111	2608207352	Coil, AM-ANT Matching	1	
L112	2658001020	LPF-L, MPX19/38	1	
L113	2658001020	LPF-L, MPX19/38	1	
L114	2848001070	Coil, AM IFT	1	
L115/L116	2648656083	Coil Inductor, 56 uH	2	
Q101	2208606104	BKTC3198/KTC1815Y, NPN	1	
Q102-Q103	2208606104	BKTC3198/KTC1815Y, NPN	2	D
Q104	2208606104	BKTC3198/KTC1815Y, NPN	1	
Q105	2208606108	KTC2240BL/BKTC3200, NPN	1	
Q106-Q107	2208606104	BKTC3198/KTC1815Y, NPN	2	D
Q108	2208606104	BKTC3198/KTC1815Y, NPN	1	
Q109	2208222105	DTA114YS	1	
Q110	2208606104	BKTC3198/KTC1815Y, NPN	1	
Q111-Q112	2208606104	BKTC3198/KTC1815Y, NPN	2	D
Q113	2208222105	DTA114YS	1	
Q114	2208606104	BKTC3198/KTC1815Y, NPN	1	
Q115	2208222105	DTA114YS	1	
Q116	2208606104	BKTC3198/KTC1815Y, NPN	1	
Q117	2208222105	DTA114YS	1	
Q118	2208222105	DTA114YS	1	D
Q119	2208606104	BKTC3198/KTC1815Y, NPN	1	D
Q120/Q121	2208406103	KTC1923Y/BKTC3194Y, NPN	2	
Q122	2208222105	DTA114YS	1	D
Q123/Q124	2208406103	KTC1923Y/BKTC3194Y, NPN	2	
Q125	2208606104	BKTC3198/KTC1815Y, NPN	1	
Q126	2208622108	DTC114TS	1	
Q127	2208606104	BKTC3198/KTC1815Y, NPN	1	
Q128	2208222105	DTA114YS	1	
Q129/Q130	2208606112	KTD1302, NPN	2	
Q131	2208606104	BKTC3198/KTC1815Y, NPN	1	
Q132	2208622106	DTC114YS	1	
Q133	2218211100	FET, 2SK168DTZ	1	
Q134	2218207115	FET, 2SK192GR	1	
Q135	2218207106	FET, 2SK117Y	1	
Q136	2208206105	BKTA1266/KTA1015Y, PNP	1	
R101/R102	3069104970	Carbon Film 100 kohm 1/5 W J	2	
R103	3069820970	Carbon Film 82 ohm 1/5 W J	1	
R104	3069104970	Carbon Film 100 kohm 1/5 W J	1	D
R105	3069473970	Carbon Film 47 kohm 1/5 W J	1	D
R106	3069104970	Carbon Film 100 kohm 1/5 W J	1	
R107	3069473970	Carbon Film 47 kohm 1/5 W J	1	
R108	3069331970	Carbon Film 330 ohm 1/5 W J	1	D
R109	3069561970	Carbon Film 560 ohm 1/5 W J	1	
R110	3069102970	Carbon Film 1 kohm 1/5 W J	1	
R111	3069103970	Carbon Film 10 kohm 1/5 W J	1	
R112	3069221970	Carbon Film 220 ohm 1/5 W J	1	D
R113	3069104970	Carbon Film 100 kohm 1/5 W J	1	
R114	3069221970	Carbon Film 220 ohm 1/5 W J	1	
R115	3069152970	Carbon Film 1.5 kohm 1/5 W J	1	
R116	3069101970	Carbon Film 100 ohm 1/5 W J	1	
R117-R118	3069221970	Carbon Film 220 ohm 1/5 W J	2	
R119	3069221970	Carbon Film 220 ohm 1/5 W J	1	
R120	3069473970	Carbon Film 47 kohm 1/5 W J	1	D
R121	3069821970	Carbon Film 820 ohm 1/5 W J	1	

Ref. No.	Part No.	Description	Q'ty	Version
R122	3069472970	Carbon Film 4.7 kohm 1/5 W J	1	
R123	3069221970	Carbon Film 220 ohm 1/5 W J	1	
R124	3069155970	Carbon Film 1.5 Mohm 1/5 W J	1	D
R125	3069473970	Carbon Film 47 kohm 1/5 W J	1	D
R126	3069472970	Carbon Film 4.7 kohm 1/5 W J	1	
R127	3069472970	Carbon Film 4.7 kohm 1/5 W J	1	D
R128	3069473970	Carbon Film 47 kohm 1/5 W J	1	
R129	3069472970	Carbon Film 4.7 kohm 1/5 W J	1	
R130	3069104970	Carbon Film 100 kohm 1/5 W J	1	
R131	3069472970	Carbon Film 4.7 kohm 1/5 W J	1	
R132	3069473970	Carbon Film 47 kohm 1/5 W J	1	D
R133		Jumper		
R135	3069104970	Carbon Film 100 kohm 1/5 W J	1	D
R136	3069331970	Carbon Film 330 ohm 1/5 W J	1	
R137	3069273970	Carbon Film 27 kohm 1/5 W J	1	
R138	3069471970	Carbon Film 470 ohm 1/5 W J	1	
R139	3069151970	Carbon Film 150 ohm 1/5 W J	1	
R140	3069820970	Carbon Film 82 ohm 1/5 W J	1	
R141	3069331970	Carbon Film 330 ohm 1/5 W J	1	
R142	3069153970	Carbon Film 15 kohm 1/5 W J	1	
R143	3069331970	Carbon Film 330 ohm 1/5 W J	1	D
R144	3248050343	Semi Fixed Resister, 50kB	1	D
R145	3069821970	Carbon Film 820 ohm 1/5 W J	1	
R146	3069471970	Carbon Film 470 ohm 1/5 W J	1	
R147/R148	3069221970	Carbon Film 220 ohm 1/5 W J	2	
R149-R150	3069103970	Carbon Film 10 kohm 1/5 W J	2	
R151	3069100970	Carbon Film 10 ohm 1/5 W J	1	D
R153	3248020343	Semi Fixed Resister, 20kB	1	
R154	3069820970	Carbon Film 82 ohm 1/5 W J	1	
R155	3069152970	Carbon Film 1.5 kohm 1/5 W J	1	
R156	3069104970	Carbon Film 100 kohm 1/5 W J	1	
R157	3069391970	Carbon Film 390 ohm 1/5 W J	1	
R158	3069682970	Carbon Film 6.8 kohm 1/5 W J	1	
R159	3069332970	Carbon Film 3.3 kohm 1/5 W J	1	
R160	3069331970	Carbon Film 330 ohm 1/5 W J	1	
R161	3069681970	Carbon Film 680 ohm 1/5 W J	1	D
R162	3069220970	Carbon Film 22 ohm 1/5 W J	1	
R163	3069391970	Carbon Film 390 ohm 1/5 W J	1	
R164	3069102970	Carbon Film 1 kohm 1/5 W J	1	
R165	3069272970	Carbon Film 2.7 kohm 1/5 W J	1	
R166	3069681970	Carbon Film 680 ohm 1/5 W J	1	D
R167	3069332970	Carbon Film 3.3 kohm 1/5 W J	1	D
(R167)	3069152970	Carbon Film 1.5 kohm 1/5 W J	1	KS
R168	3069222970	Carbon Film 2.2 kohm 1/5 W J	1	
R169	3069102970	Carbon Film 1 kohm 1/5 W J	1	D
R170	3069155970	Carbon Film 1.5 Mohm 1/5 W J	1	D
R171	3069102970	Carbon Film 1 kohm 1/5 W J	1	D
R172	3248010343	Semi Fixed Resister, 10kB	1	D
R173	3069331970	Carbon Film 330 ohm 1/5 W J	1	
R174	3069472970	Carbon Film 4.7 kohm 1/5 W J	1	
R175	3069331970	Carbon Film 330 ohm 1/5 W J	1	
R176/R177	3069221970	Carbon Film 220 ohm 1/5 W J	2	
R178	3069202970	Carbon Film 2 kohm 1/5 W J	1	D
(R178)	3069392970	Carbon Film 3.9 kohm 1/5 W J	1	KS
R179	3069101970	Carbon Film 100 ohm 1/5 W J	1	
R180	3069684970	Carbon Film 680 kohm 1/5 W J	1	D
R181	3069562970	Carbon Film 5.6 kohm 1/5 W J	1	D
R182	3069682970	Carbon Film 6.8 kohm 1/5 W J	1	
R183	3069332970	Carbon Film 3.3 kohm 1/5 W J	1	
R184	3069104970	Carbon Film 100 kohm 1/5 W J	1	
R185	3069332970	Carbon Film 3.3 kohm 1/5 W J	1	D
R186	3069751970	Carbon Film 750 ohm 1/5 W J	1	
R187	3069472970	Carbon Film 4.7 kohm 1/5 W J	1	
R188	3069390970	Carbon Film 39 ohm 1/5 W J	1	
R189	3069391970	Carbon Film 390 ohm 1/5 W J	1	

Ref. No.	Part No.	Description				Q'ty	Version
R190	3069223970	Carbon Film	22 kohm	1/5 W	J	1	D
R191	3069103970	Carbon Film	10 kohm	1/5 W	J	1	D
R192	3069333970	Carbon Film	33 kohm	1/5 W	J	1	D
R193	3069103970	Carbon Film	10 kohm	1/5 W	J	1	D
R194	3069331970	Carbon Film	330 ohm	1/5 W	J	1	
R195	3248020243	Semi Fixed Resister, 2kB				1	
R196	3069393970	Carbon Film	39 kohm	1/5 W	J	1	
R197/R198	3069223970	Carbon Film	22 kohm	1/5 W	J	2	
R199	3069102970	Carbon Film	1 kohm	1/5 W	J	1	
RL101	5528001760	Relay, FBR46ND012-P				1	
RL102	5528001760	Relay, FBR46ND012-P				1	
RESO101	3938131600	Resonater 456F15				1	
RESO102	3938131570	Resonater 4.00MGW				1	
C200	3479222971	Electrolytic SA	2.2 uF	50 V	M	1	
C201	3519151935	Ceramic Tubular	150 pF	50 V	Z	1	
C202	3619681110	Poly	680 pF	50 V	J	1	
C203-C205	3519223935	Ceramic Tubular	0.022 uF	50 V	Z	3	
C206	3479210971	Electrolytic SA	1 uF	50 V	M	1	
C207	3519223935	Ceramic Tubular	0.022 uF	50 V	Z	1	
C208/C209	3479310141	Electrolytic SG	100 uF	25 V	M	2	
C210	3479210971	Electrolytic SA	1 uF	50 V	M	1	
C211-C213	3519223935	Ceramic Tubular	0.022 uF	50 V	Z	3	
C214/C215	3479222041	Electrolytic SA	22 uF	25 V	M	2	
C216	3519101935	Ceramic Tubular	100 pF	50 V	Z	1	D
C217	3479210971	Electrolytic SA	1 uF	50 V	M	1	
C218	3519223935	Ceramic Tubular	0.022 uF	50 V	Z	1	
C219	3519221935	Ceramic Tubular	220 pF	50 V	Z	1	
C220	3519101935	Ceramic Tubular	100 pF	50 V	Z	1	D
C221	3479233971	Electrolytic SA	3.3 uF	50 V	M	1	
C222	3519223935	Ceramic Tubular	0.022 uF	50 V	Z	1	
C223	3479233971	Electrolytic SA	3.3 uF	50 V	M	1	
C224	3479347041	Electrolytic SG	47 uF	25 V	M	1	
C225	3479247971	Electrolytic SA	4.7 uF	50 V	M	1	
C226	3479222041	Electrolytic SA	22 uF	25 V	M	1	
C227	3479322131	Electrolytic SG	220 uF	16 V	M	1	
C228	3479247871	Electrolytic SA	0.47 uF	50 V	M	1	
C229	3519223935	Ceramic Tubular	0.022 uF	50 V	Z	1	
C230	3409322269	Electrolytic SG	2200 uF	35 V	M	1	
C231	3479347071	Electrolytic SG	47 uF	50 V	M	1	
C232/C233	6796831203	Mylar	0.068 uF	100 V	J	2	
C234/C235	3519223935	Ceramic Tubular	0.022 uF	50 V	Z	2	
C236/C237	3519103935	Ceramic Tubular	0.01 uF	50 V	Z	2	
C238	3519100935	Ceramic Tubular	10 pF	50 V	Z	1	D
C239	3479347071	Electrolytic SG	47 uF	50 V	M	1	
C240	3479222971	Electrolytic SA	2.2 uF	50 V	M	1	
C241	3519221935	Ceramic Tubular	220 pF	50 V	Z	1	
C242	3519103935	Ceramic Tubular	0.01 uF	50 V	Z	1	
R200	3069682970	Carbon Film	6.8 kohm	1/5 W	J	1	
R201	3069103970	Carbon Film	10 kohm	1/5 W	J	1	D
R202	3029109472	Metal Film	10 ohm	1 W		1	
R203	3069102970	Carbon Film	1 kohm	1/5 W	J	1	
R204-R206	3069103970	Carbon Film	10 kohm	1/5 W	J	3	D
R207	3069104970	Carbon Film	100 kohm	1/5 W	J	1	
R208	3069121970	Carbon Film	120 ohm	1/5 W	J	1	
R209	3248050343	Semi Fixed Resister, 50kB				1	
R210	3069472970	Carbon Film	4.7 kohm	1/5 W	J	1	
R211/R212	3069221970	Carbon Film	220 ohm	1/5 W	J	2	
R213	3069473970	Carbon Film	47 kohm	1/5 W	J	1	D
(R213)	3069513970	Carbon Film	51 kohm	1/5 W	J	1	KS
R214	3069392970	Carbon Film	3.9 kohm	1/5 W	J	1	
R215	3069473970	Carbon Film	47 kohm	1/5 W	J	1	D
(R215)	3069513970	Carbon Film	51 kohm	1/5 W	J	1	KS
R216	3069104970	Carbon Film	100 kohm	1/5 W	J	1	
R217	3069121970	Carbon Film	120 ohm	1/5 W	J	1	
R218	3069473970	Carbon Film	47 kohm	1/5 W	J	1	

Ref. No.	Part No.	Description				Q'ty	Version
R219	3069182970	Carbon Film	1.8 kohm	1/5 W	J	1	D
(R219)	3069332970	Carbon Film	3.3 kohm	1/5 W	J	1	KS
R220	3248050442	Semi Fixed Resister, 500kB				1	
R221	3069331970	Carbon Film	330 ohm	1/5 W	J	1	
R222	3069223970	Carbon Film	22 kohm	1/5 W	J	1	
R223	3069272970	Carbon Film	2.7 kohm	1/5 W	J	1	D
(R223)	3069392970	Carbon Film	3.9 kohm	1/5 W	J	1	KS
R224	3248050442	Semi Fixed Resister, 500kB				1	
R225	3069223970	Carbon Film	22 kohm	1/5 W	J	1	
R226	3069272970	Carbon Film	2.7 kohm	1/5 W	J	1	D
(R226)	3069332970	Carbon Film	3.3 kohm	1/5 W	J	1	KS
R227	3069182970	Carbon Film	1.8 kohm	1/5 W	J	1	D
(R227)	3069392970	Carbon Film	3.9 kohm	1/5 W	J	1	KS
R228	3069224970	Carbon Film	220 kohm	1/5 W	J	1	
R229	3069181970	Carbon Film	180 ohm	1/5 W	J	1	
R230/R231	3069104970	Carbon Film	100 kohm	1/5 W	J	2	
R232	3069223970	Carbon Film	22 kohm	1/5 W	J	1	
R233	3069182970	Carbon Film	1.8 kohm	1/5 W	J	1	
R235	3069332970	Carbon Film	3.3 kohm	1/5 W	J	1	
R236	3069472970	Carbon Film	4.7 kohm	1/5 W	J	1	
R237	3069223970	Carbon Film	22 kohm	1/5 W	J	1	
R238	3029331472	Metal Film	330 ohm	1 W		1	
R239	3069102970	Carbon Film	1 kohm	1/5 W	J	1	
R240	3069333970	Carbon Film	33 kohm	1/5 W	J	1	
R241	3069104970	Carbon Film	100 kohm	1/5 W	J	1	D
R242	3069563970	Carbon Film	56 kohm	1/5 W	J	1	
R243	3069103970	Carbon Film	10 kohm	1/5 W	J	1	
R244	3029271472	Metal Film	270 ohm	1 W		1	
R245	3069183970	Carbon Film	18 kohm	1/5 W	J	1	D
(R245)	3069103970	Carbon Film	10 kohm	1/5 W	J	1	KS
R246	3069102970	Carbon Film	1 kohm	1/5 W	J	1	
R247	3069152970	Carbon Film	1.5 kohm	1/5 W	J	1	
R248-R251	3069332970	Carbon Film	3.3 kohm	1/5 W	J	4	
R252	3069152970	Carbon Film	1.5 kohm	1/5 W	J	1	
R253-R255	3069102970	Carbon Film	1 kohm	1/5 W	J	3	
R256	3069103970	Carbon Film	10 kohm	1/5 W	J	1	
R257	3069102970	Carbon Film	1 kohm	1/5 W	J	1	
R258	3069472970	Carbon Film	4.7 kohm	1/5 W	J	1	
R260	3069103970	Carbon Film	10 kohm	1/5 W	J	1	
R261	3069823970	Carbon Film	82 kohm	1/5 W	J	1	
R262	3069472970	Carbon Film	4.7 kohm	1/5 W	J	1	
R263	3069271970	Carbon Film	270 ohm	1/5 W	J	1	
R264	3069103970	Carbon Film	10 kohm	1/5 W	J	1	
G1-G3	4235007210	Terminal GND				3	
P1/P2	4228001410	Pin Solder				2	
P1-1	**054031010002**	**Ass'y P.C.B Front**					
9	4658003710	Switch Tact				26	D
	4658003710	Switch Tact				23	KS
10	3208062810	Encorder Volume				1	
28(FL1)	2328000304	FL, VFD CM1256C				1	
CN101	436211223332	Lead Ass'y 11P 220 mm				1	
CN102	436212223332	Lead Ass'y 12P 220 mm				1	
BATT301	5518001000	IC, CR2430-P1-2				1	
C301/C302	3519472915	Ceramic Tubular	4700 pF	50 V	Z	2	
C303/C304	3519104935	Ceramic Tubular	0.1 uF	50 V	Z	2	
C305	3479310141	Electrolytic SG	100 uF	25 V	M	1	
C306	3479247971	Electrolytic SA	4.7 uF	50 V	M	1	
C307	3519821935	Ceramic Tubular	820 pF	50 V	Z	1	
C310	3519200935	Ceramic Tubular	20 pF	50 V	J	1	
D301-D308	2058322101	Diode, 1N4148 Switching				8	
FL1	2328000304	FL, VFD CM1256C				1	
IC301	2138313211	IC, UPD78043GF-076-3B9				1	
Q301	2208622106	DTC114YS				1	
R301-R303	3069104970	Carbon Film	100 kohm	1/5 W	J	3	

Ref. No.		Part No.	Description	Q'ty	Version
R304		3069473970	Carbon Film 47 kohm 1/5 W J	1	
R305-R312		3069472970	Carbon Film 4.7 kohm 1/5 W J	8	
R313		3069104970	Carbon Film 100 kohm 1/5 W J	1	
R314/R315		3069473970	Carbon Film 47 kohm 1/5 W J	2	
R316		3069223970	Carbon Film 22 kohm 1/5 W J	1	
R317		3069473970	Carbon Film 47 kohm 1/5 W J	1	
R318		3069104970	Carbon Film 100 kohm 1/5 W J	1	
R319		3069103970	Carbon Film 10 kohm 1/5 W J	1	
R320		3069473970	Carbon Film 47 kohm 1/5 W J	1	
R321		3069103970	Carbon Film 10 kohm 1/5 W J	1	
R322		3069473970	Carbon Film 47 kohm 1/5 W J	1	
P1-2		**054031010003**	**Ass'y P.C.B Power Switch**		
9		4658003710	Switch Tact	1	
CN403		436202123231	Lead Ass'y 2P 120 mm	1	
P2		**054031010004**	**Ass'y P.C.B Tuner Outlet**		
27		4618006610	Switch Slide	1	B
F101	⚠	5508300734	Fuse, TL 0.1 A 250 V	1	C,D,E,F
F102	⚠	5508201230	Fuse, NB 0.25 A 250 V	1	KS
F103	⚠	5508301734	Fuse, TL 630 mA 250 V	1	C,D,E,F
		4255001010	Fuse Clip	4	KS
	⚠	2828009581	Power Transformer, 230 V 50 Hz	1	C,D,F
	⚠	2828009907	Power Transformer, 220 V 60 Hz	1	KS

Power Requirements:

A: 120 V 60 Hz for American/Canadian version
B: 120/220 V, 60/50 Hz for mult-voltage version (switchable)
D: 230 V 50 Hz for German and General European version
E: 240 V 50 Hz for U.K/Austalian version
G: 230 V 50 Hz for Other area

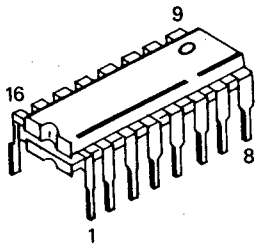
PRODUCT SAFETY NOTICE

Each precaution in this manual should be follower during servicing. Components identified with the IEC symbol ⚠ in the parts list and the safety can be of special significance. When replacing a component identified with ⚠ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

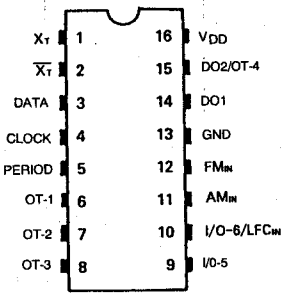
SEMICONDUCTOR LEAD IDENTIFICATION & INTERNAL DIAGRAMS

TC9216P (High speed PLL with built-in prescaler for DTS): IC101

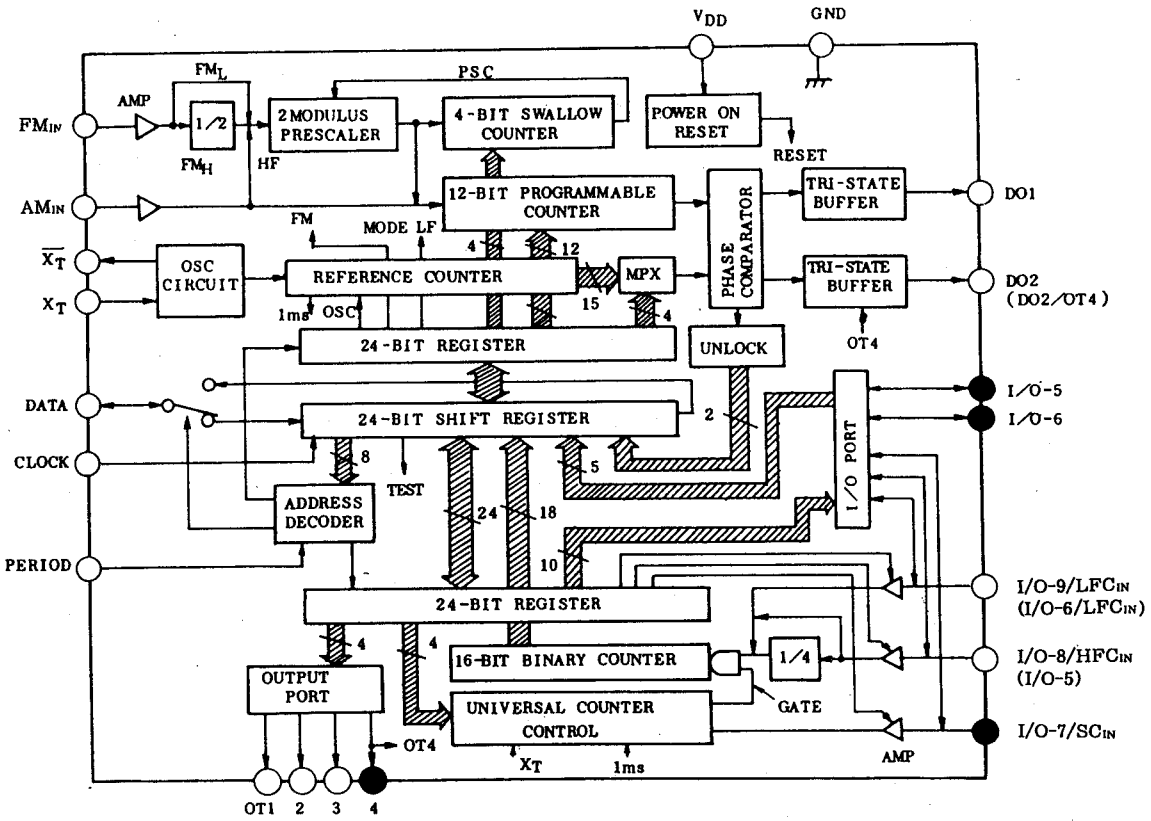
Top View



Pin Connection

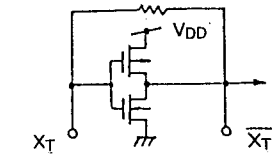
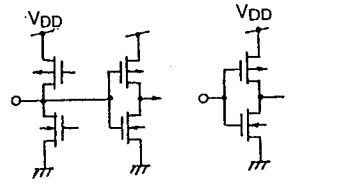
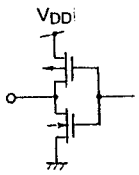
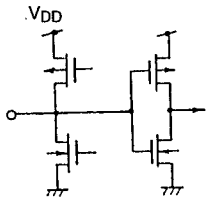
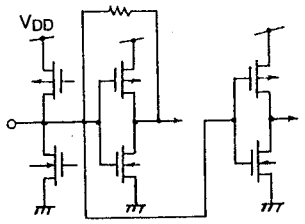
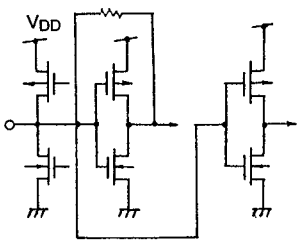


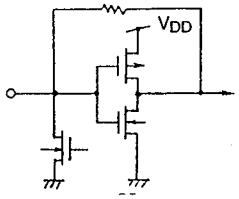
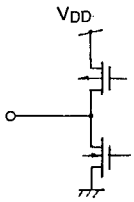
Block Diagram



(Note) ● Mark terminals are not existence in TC9216P.
Terminal name of TC9216P is shown in parentheses.
Others are common terminals.

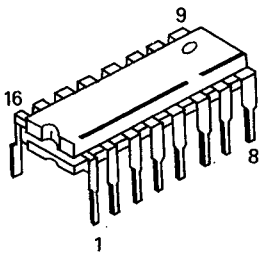
Functional Description of Each Terminal

PIN NO.	SYMBOL	TERMINAL NAME	FUNCTIONAL AND OPERATIONAL DESCRIPTION	SCHEMATIC
1	X_T	Crystal Oscillator Terminal	Crystal resonator of 7.2 MHz or 4.5 MHz shall be connected to this terminal to generate reference frequency and internal clock.	
2	$\overline{X_T}$			
3	DATA	Serial Data Input/Output	Serial I/O port Serial data transfer is performed between controller and these terminals to control universal counter and I/O port, and sets frequency dividing numbers and frequency dividing mode.	
4	CLOCK	Clock Signal Input		
5	PERIOD	Period Signal Input		
6	OT-1	General Purpose Output Port	These terminals are CMOS structure and used as output of control signal etc. They are set to "L" level at power "ON". (OT-4 of TC9216P can be used by switching D02.)	
7	OT-2			
8	OT-3			
9 (-)	OT-4			
10 (9)	I/O-5	General Purpose I/O Port	These terminals are CMOS structure and can be used freely as input or output. It becomes input port at power "ON". (Exclusive terminal of I/O port is only I/O-5 in TC9216P.)	
11 (-)	I/O-6			
12 (-)	I/O-7 /SC_{IN}	General Purpose I/O Port/ Universal Counter Periodic Measurement Input	This terminal is general purpose I/O port. It can be also used as signal input terminal which performs periodic measurement of low frequency signal by program control. (Note) It is set input mode of I/O port at power "ON".	
13 (-)	I/O-8 /HFC_{IN}	General Purpose I/O Port/ Universal Counter Frequency Measurement Input	These terminals are general purpose I/O ports. They can be also used as input terminals for frequency measurement of universal counter by program control. Frequency measurement is available for intermediate frequency measurement etc. It is with built-in amp. and can operate small amplitude signal with capacitor coupling. (TC9216P does not have HFC_{IN} input.) (Note) It is set input mode of I/O port at power "ON".	
14 (10)	I/O-9 /LFC_{IN} (I/O-6 /LFC_{IN})			

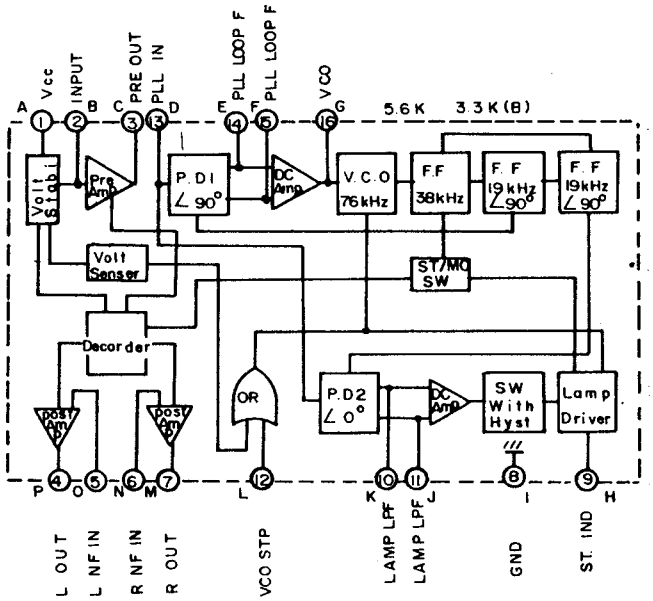
PIN NO.	SYMBOL	TERMINAL	FUNCTIONAL AND OPERATIONAL DESCRIPTION	SCHEMATIC
15 (11)	AM_{IN}	Programmable Counter Input	The local oscillator signal of each FM/AM band is input to these terminals. It is with built-in amp, and can operate small amplitude signal with capacitor coupling.	
16 (12)	FM_{IN}			
18 (14)	D01	Phase Comparator Output (General purpose Output Port)	These terminals are tristate outputs of phase comparator. D01 and D02 are paralel output. (D02 of TC9216P can be also used as general purpose output port by program control.)	
19 (15)	D02 (D02/OT-4)			
17 (13)	GND	Power Supply Terminal	Power supply voltage of 5.0 V ±10% is applied to this terminal.	
20 (16)	V_{DD}			

* No. 1-8 pins are common terminals of TC9216P/TC9217P.
* Terminal name and number of TC9216P are shown in parenthesed.

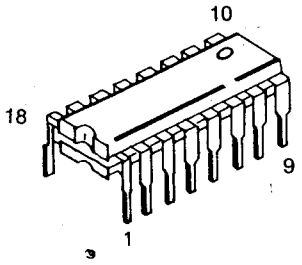
HA12016 (FM stereo multiplex decoder): IC106



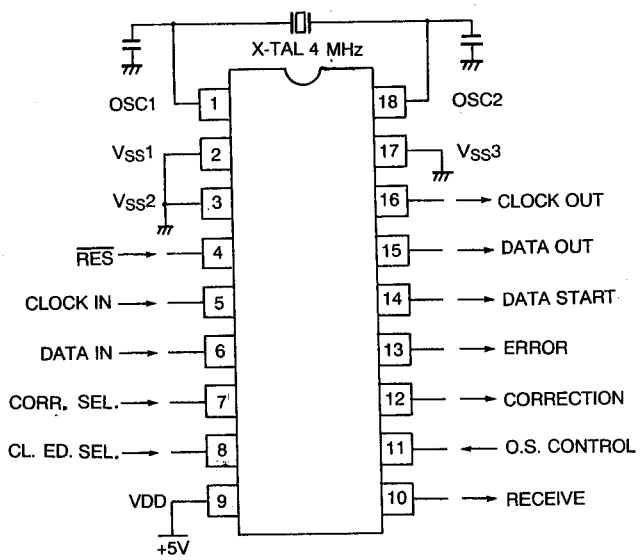
Block Diagram



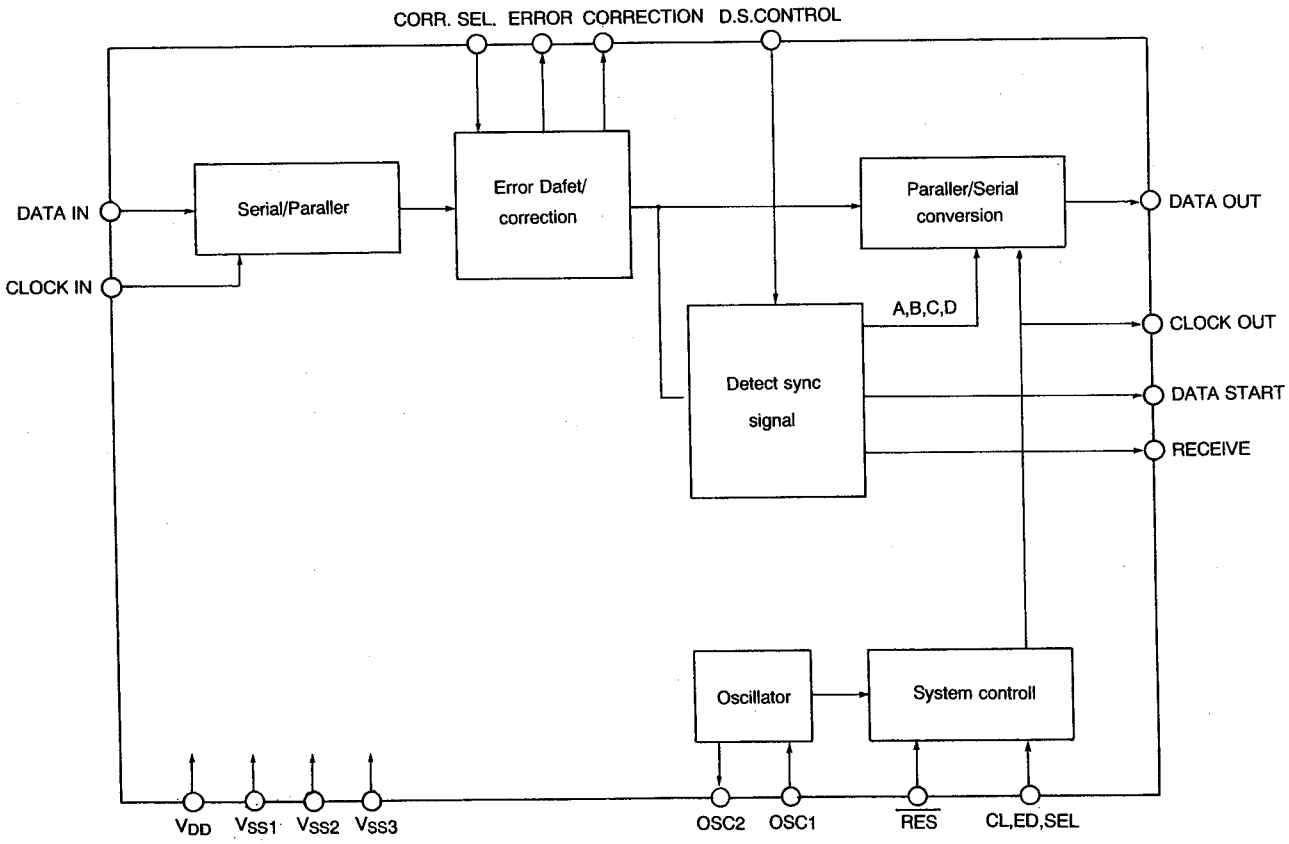
LC7073 (RDS Synchronization): IC105



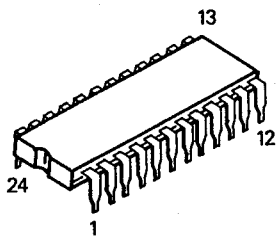
Pin Connection



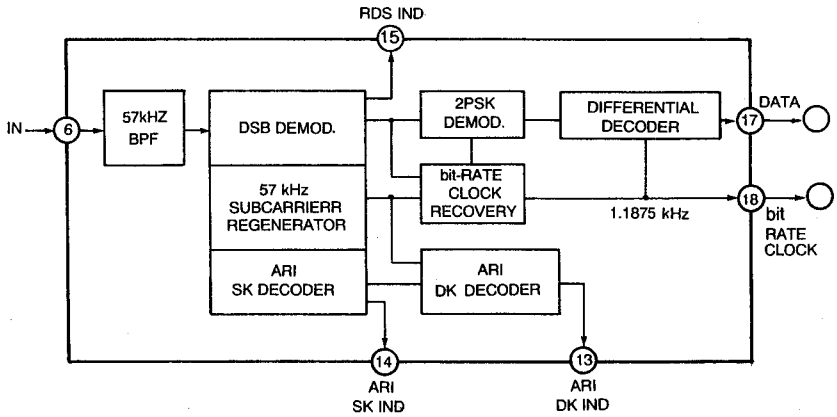
Block Diagram



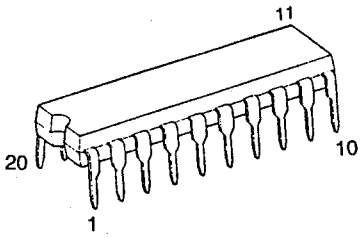
LA2230 (RDS Decoder): IC104



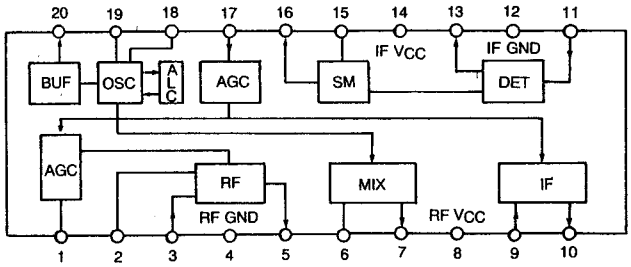
Block Diagram



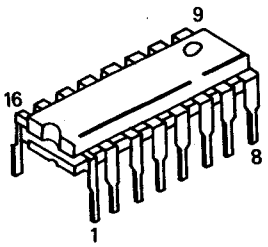
LA1245 (AM Tuner): IC103



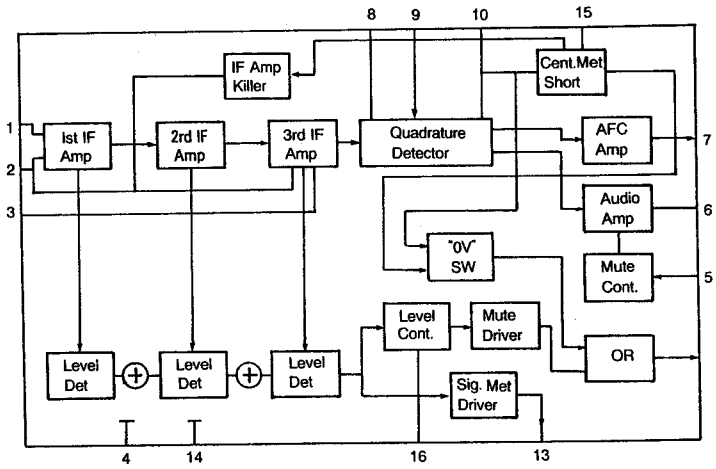
Block Diagram



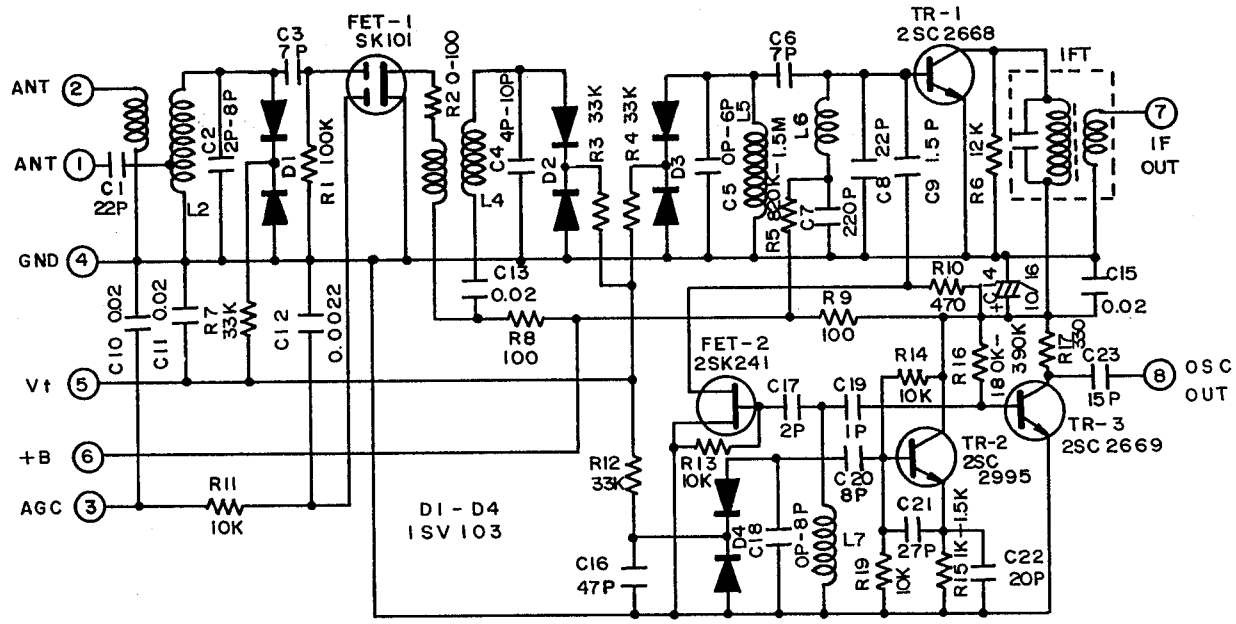
HA12412 (FM IF System): IC107



Block Diagram

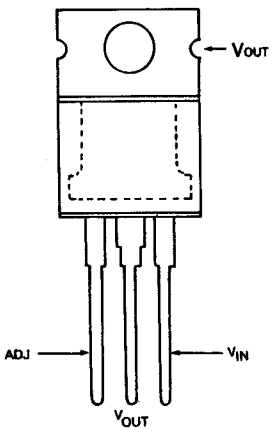


FRONT-END (FE407-G60): FE101

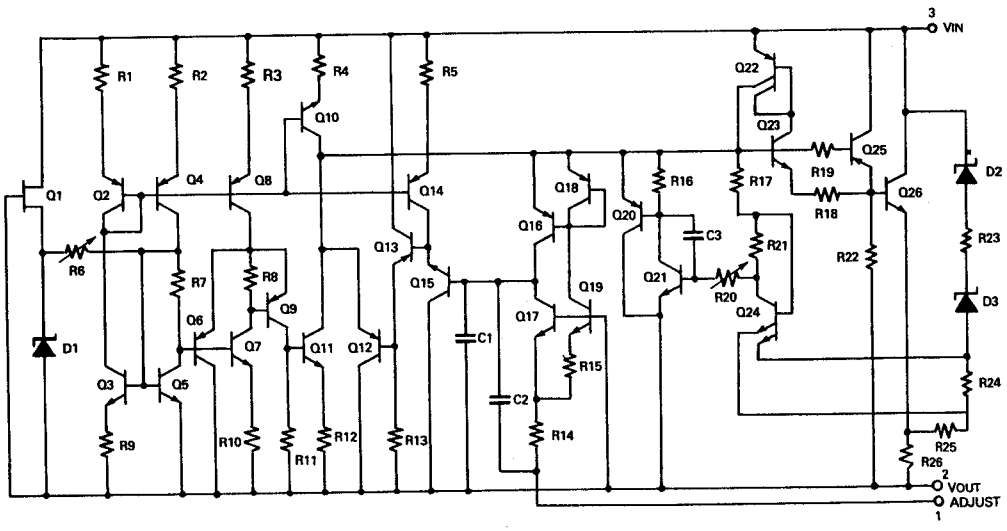


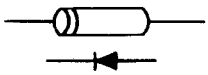
LM317T: (Voltage regulator): IC108

Front View

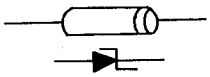


Schematic Diagram

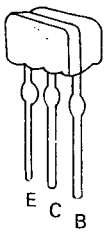




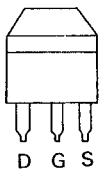
IN4002: D127, D128, D129, D130, D131, D132
IN4148: D101, D106, D107, D108, D109, D110



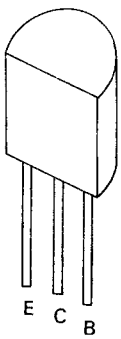
DZ5.1BS: D102
DZ5.6BS: D111
DZ62BS: D124, D126
DZ12BS: D125
DZ27BS: D122

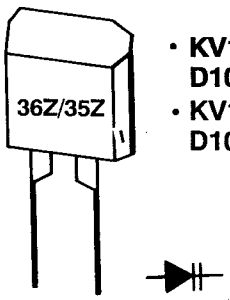


DTC114YS: Q132, Q301
DTC114TS: Q126
DTA114YS: Q109, Q113, Q115, Q117
Q118, Q122, Q128



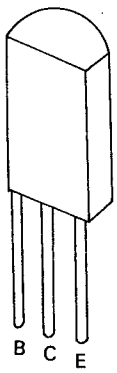
KTC1923Y/BKTC3194Y:
Q120, Q121, Q123, Q124





- KV1236ZD (MW & LW)
  D103, D104, D105
- KV1235ZD (MW Only)
  D104, D105

KTD1302: Q129, Q130
KTC2240BL/BKTC3200: Q105
KTA1015Y: Q136
BKTC3198/KTC1815Y: Q101, Q102, Q103, Q104
Q105, Q106, Q107, Q108
Q110, Q111, Q112, Q114
Q119, Q125, Q127, Q131



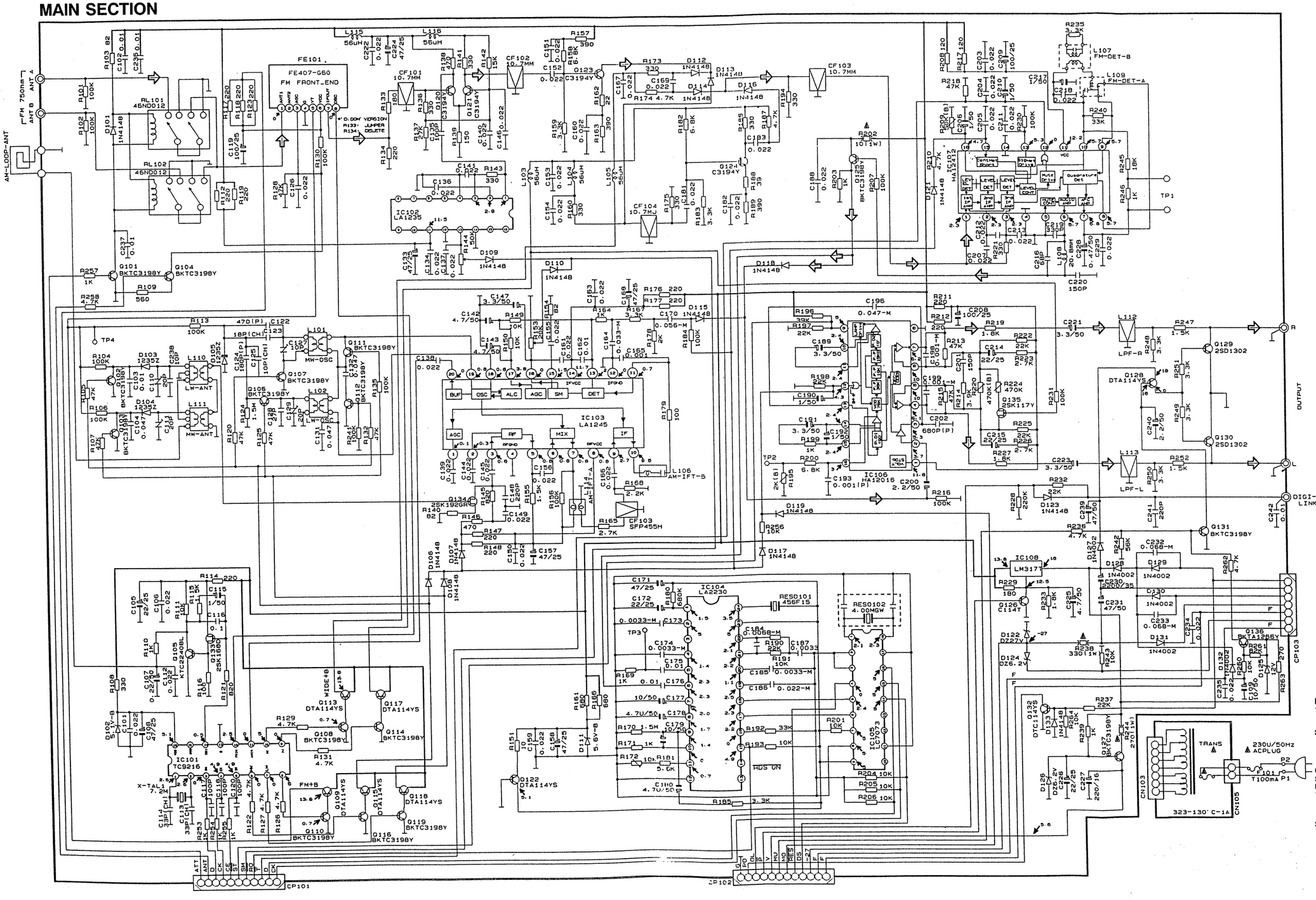
2SK168D: Q133

NOTES

SCHEMATIC DIAGRAMS

Model No.: TX-5030C

MAIN SECTION



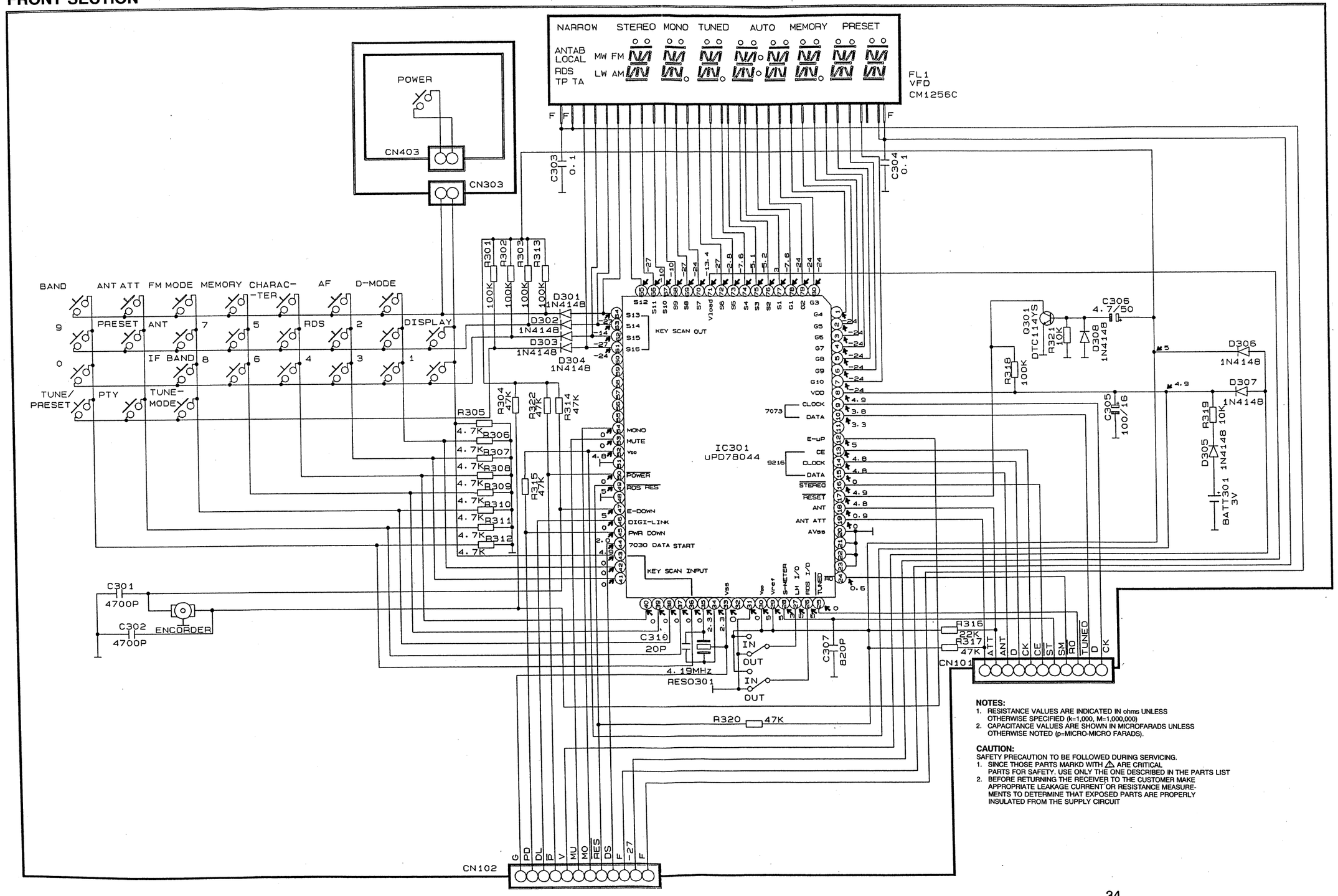
NOTES:

1. RESISTANCE VALUES ARE INDICATED IN ohms UNLESS OTHERWISE SPECIFIED (K=1,000, M=1,000,000)
2. CAPACITANCE VALUES ARE SHOWN IN MICROFARADS UNLESS OTHERWISE NOTED (p=MICRO-MICRO FARADS).

CAUTION:

SAFETY PRECAUTION TO BE FOLLOWED DURING SERVICING.

1. SINCE THOSE PARTS MARKD WITH ⚠ ARE CRITICAL PARTS FOR SAFETY. USE ONLY THE ONE DESCRIBED IN THE PARTS LIST.
2. BEFORE RETURNING THE RECEIVER TO THE CUSTOMER MAKE APPROPRIATE LEAKAGE CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT



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